

THE PROFESSIONAL SERVICES CHALLENGE

WESTERN EUROPE 1989

INPUT

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DECEMBER 1989

# THE PROFESSIONAL SERVICES CHALLENGE

# WESTERN EUROPE

## 1989

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#### Customer Service Programme in Europe

*The Professional Services Challenge—  
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## Abstract

This report examines the impact of professional services on the future of customer service. Taking into account the orientation of the information systems industry towards integrated solutions and away from piecemeal hardware and software implementations, the report suggests a choice of future direction for the customer service organisations of major vendors of equipment and services.

The report outlines the major services opportunities available to vendors and describes how changes happening on a global scale to business are affecting vendors at corporate levels as well as at customer services levels. After proposing a new mission for the customer service function in its management of a comprehensive customer interface facility, the report examines steps taken in this direction on the part of four organisations with customer service operations.

The report ends by quantifying the opportunities available to customer service whether it decides to adopt a new mission or to remain with a more traditional role.

This report contains 63 pages, including 34 exhibits.



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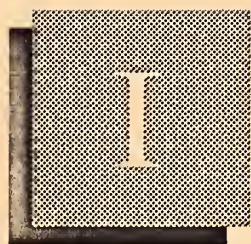
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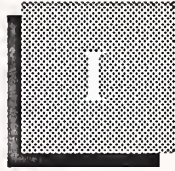


# Introduction









# Introduction

This report has been produced by INPUT as part of its 1989 Customer Services Programme in Western Europe.

## A

### Objectives

In this report, INPUT has examined the origins of professional services as a revenue stream within the customer services operations of major supplier companies. Professional services is an attractive, high-growth segment that is being used to supplement customer services revenues.

While recognising the importance of this and other components of new growth generation (which INPUT has commended to customer services management in previous reports), INPUT is seeking in this report to raise the discussion to the strategic level, where:

- Growth in other sectors within the computer services industry is equally attractive to management
- Overall industry trends present customer services management with the opportunity to reorientate the function of customer service towards being the primary channel for the satisfaction of customer support needs.

The report also charts the progress that some major vendors have made towards this reorientation.

## B

### Methodology

Data used in the compilation of this report was derived from:

- INPUT's 1989 user research programmes, consisting of telephone interviews with computer users throughout Europe
- INPUT's 1989 vendor research, consisting of telephone and face-to-face interviews with a wide range of equipment suppliers and computer services vendors

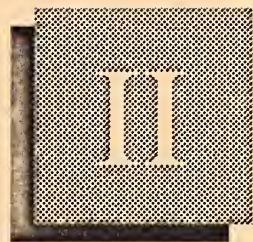
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C

## Report Structure

The report is structured as follows:

- Chapter II is an Executive Overview emphasising the key findings and recommendations of the report.
- Chapter III describes the other sectors of the overall computer services markets in Western Europe, showing their relevance to what is happening in the customer services area.
- Chapter IV highlights the changes taking place in the information systems industry. These changes are responsible for providing the customer service function with its present opportunity to play a more active role in satisfying customer needs.
- Chapter V describes the challenge facing customer service management, and offers recommendations on how it should respond.
- Appendix A contains a list of INPUT's standard definitions covering the computer services and customer services markets.

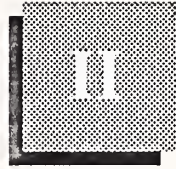


# Executive Overview









## Executive Overview

### A

#### The Nature of the Professional Services Challenge

Professional services represents an enormous challenge to customer service management, both as a productive revenue stream in its own area of operations and as an enticement to other ventures outside the currently prescribed limits of customer service (CS).

In this report INPUT examines the meaning of the service title “professional services,” and finds that it leads inevitably from the narrower connotation of services within the CS area to professional services (PS) in the wider context, as defined in INPUT’s European software and services market definition. From there it is only a small step to asking why professional services in this wider sense has proved to be such an engine for growth in the whole information services industry. Professional services personnel are among the most sought after in the IS and telecommunications fields, and command salaries to match their scarcity.

The report examines:

- What opportunities professional services opens up, in the widest sense
- What driving forces are causing the change to a service-oriented industry, with professional services vendors leading the way with the most complex and advanced automation projects
- How customer service is being affected by these changes
- How certain well-known suppliers are adjusting their structures and their cultures in order to better serve their users’ changing needs

INPUT observes that this all adds up to an enormous opportunity for CS to take a more active role with a wider mission in major equipment and multiservice vendor organisations. This opportunity for an extended role

can be consciously accepted or rejected. There is still growth potential, albeit smaller, within the realm of CS as currently defined. Exhibit II-1 traces the stages of PS from its narrow sense, to the choice to be faced of taking “the high road or the low road” to the future.

## EXHIBIT II-1

### The Professional Services Challenge

- Professional services (PS) the starting point
- PS a lifeline for customer service
- The wider PS, the wider services scene
- Reasons why the scene is changing
- The PS approach introduces a new concept
  - The "Customer Service Facilitator"
  - Monitoring changing user requirements and managing their fulfillment
- The choice facing CS management
  - Low-level versus high-level options

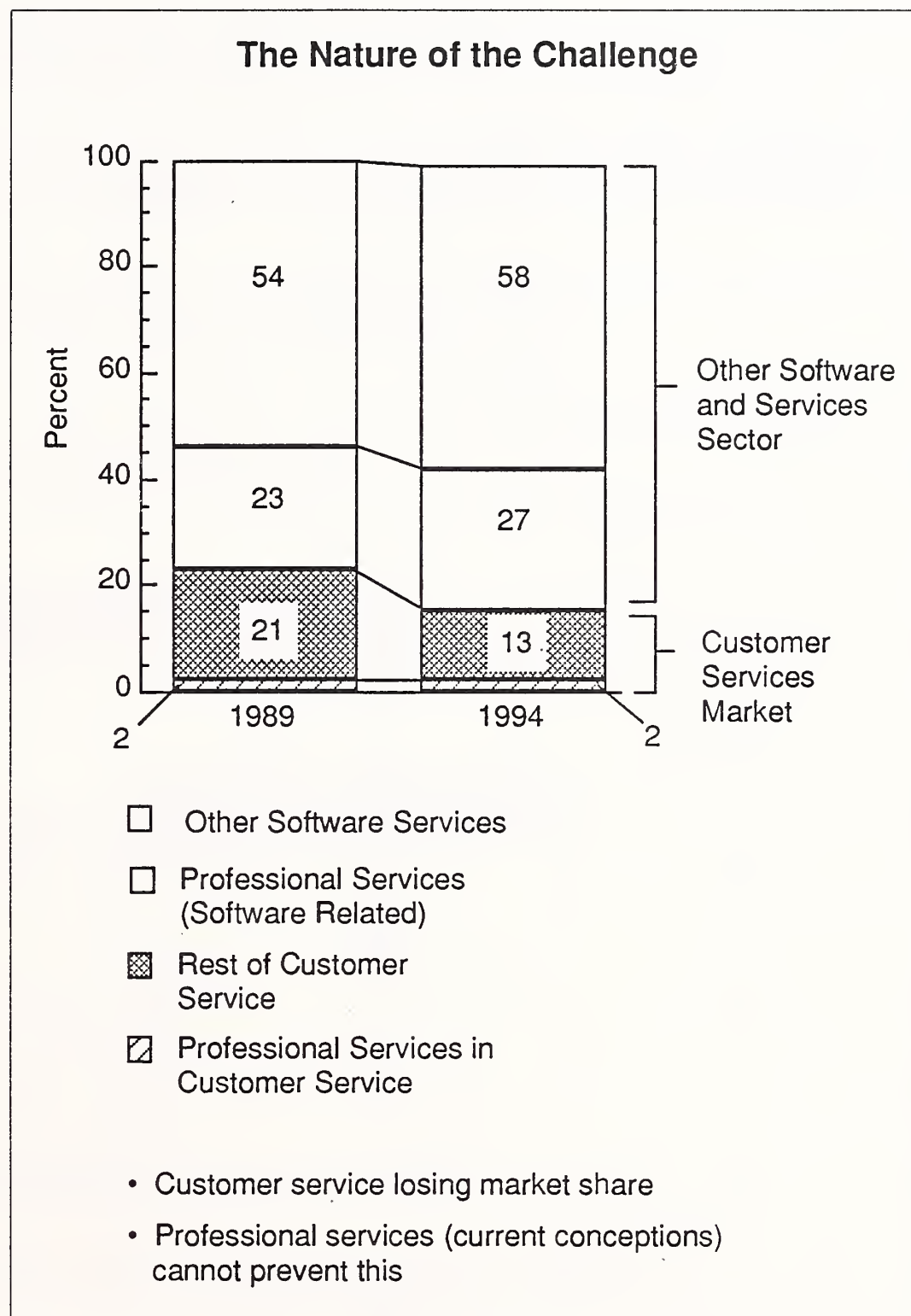
Professional services starts by being a catch-all phrase used to describe intellectually intensive service activities in any profession. It has two uses in the computer service market that INPUT researches continuously:

- PS has become a significant revenue earner in the CS area (topping \$1 billion in Western Europe in 1989), where it denotes a range of auxiliary hardware-related consulting and implementation tasks.
- PS outside the CS area is a much larger sector (over \$15 billion in Western Europe in 1989) and covers a whole spectrum of software-related activities, in consultancy and training, and implementation of systems.

Exhibit II-2 puts the challenge presented to CS management by the development of these two varieties of PS into pictorial form.

The graph (using the 100% stacked column chart technique) compares the respective market shares of the two types of professional services, set against the market shares of the “parent” sectors to which they belong. The chart’s key points are:

## EXHIBIT II-2



- Both forms of PS are gaining market share; PS within CS is actually faster than software PS. Customer services PS remains the same on the chart through rounding.
- Customer service is losing overall market share to the tune of 8%—4% to software professional services, and 4% to other software and services sectors.

- PS within CS, because of its small initial base, does not make any very great impact on the overall market share of its CS “parent.”

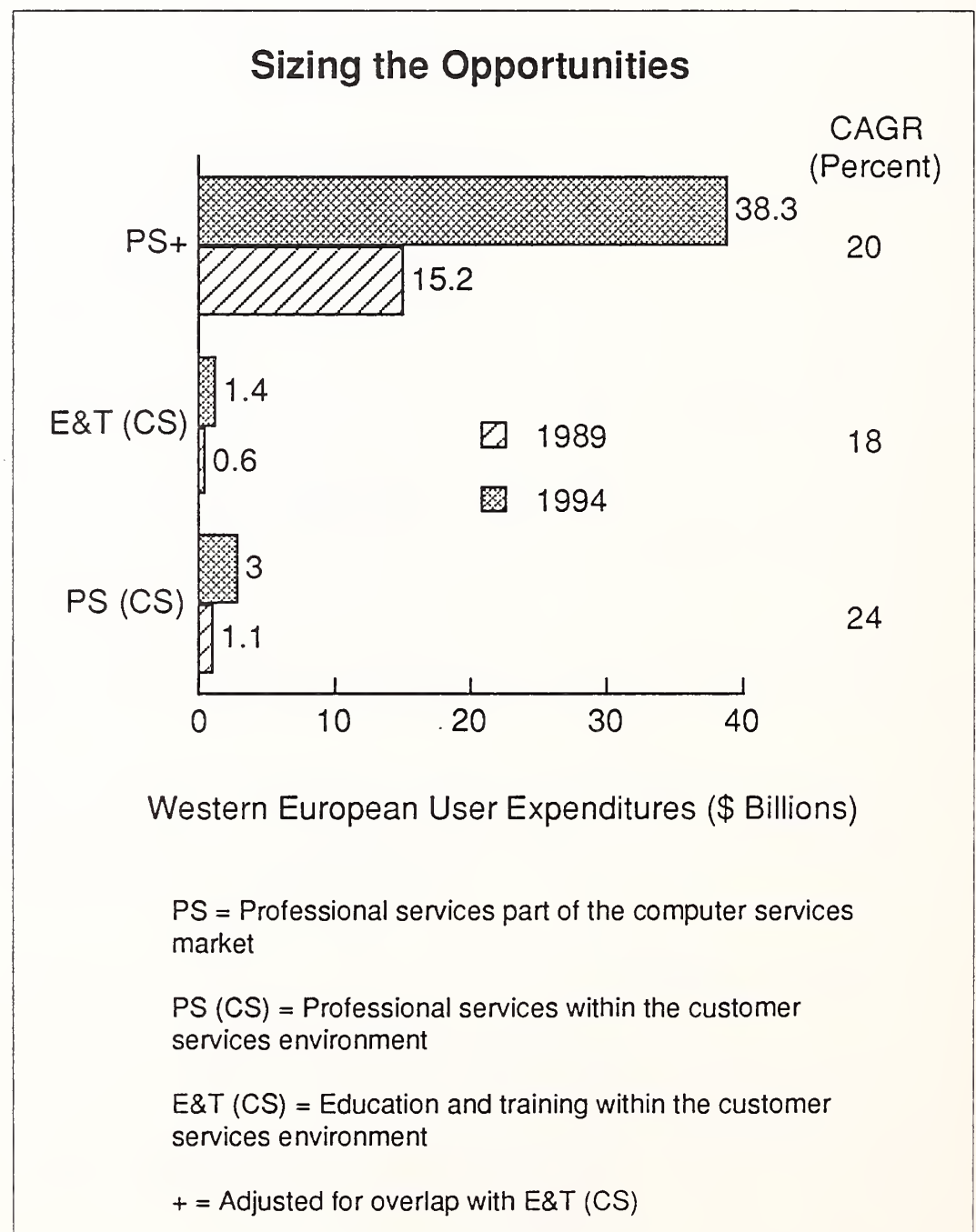
## B

### The Abundance of Opportunities

The stark reality of the previous chart is that if CS management is relying on PS to halt the declining market share, it is building on sand. Another and more radical programme must be put in place.

However, the chart has already started to show where other opportunities lie, and there are indeed a profusion of them. Exhibit II-3 compares the absolute values and the growth rates of software-related PS and PS within CS.

EXHIBIT II-3





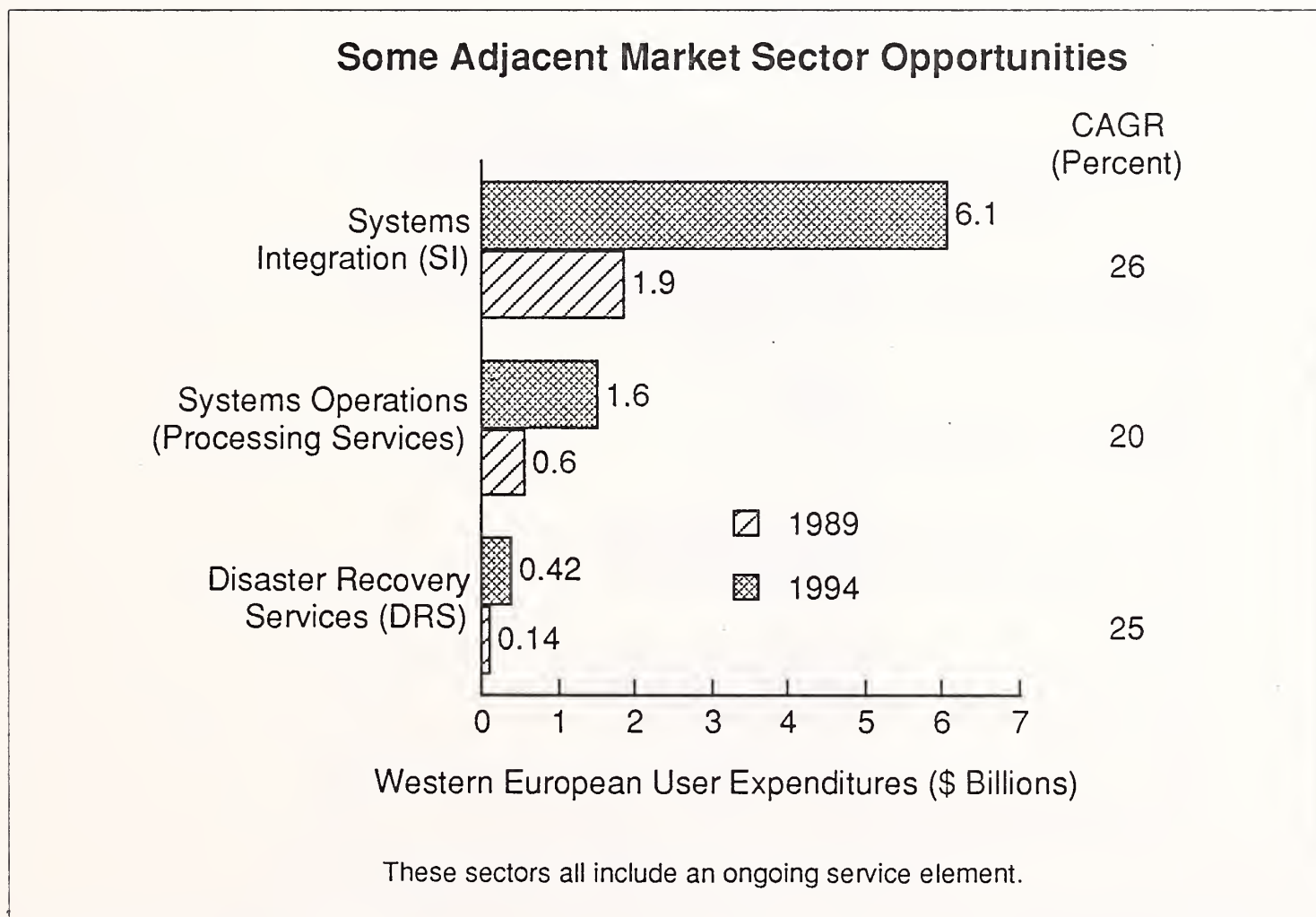
Also shown is the education and training sector within CS, which is needed to balance the fact that software-related PS includes a subsector for software-related education and training (usually undertaken by systems vendors, consultancies and independent training companies). The fact that software PS is roughly an order of magnitude larger than the CS elements should be heartening to CS management if they are prepared to examine strategies to siphon it into their area.

There are a number of related service sector opportunities which could also provide revenue growth to CS:

- Systems integration
- Systems operations (processing)—(facilities management)
- Disaster recovery

Exhibit II-4 quantifies these opportunities in another bar chart.

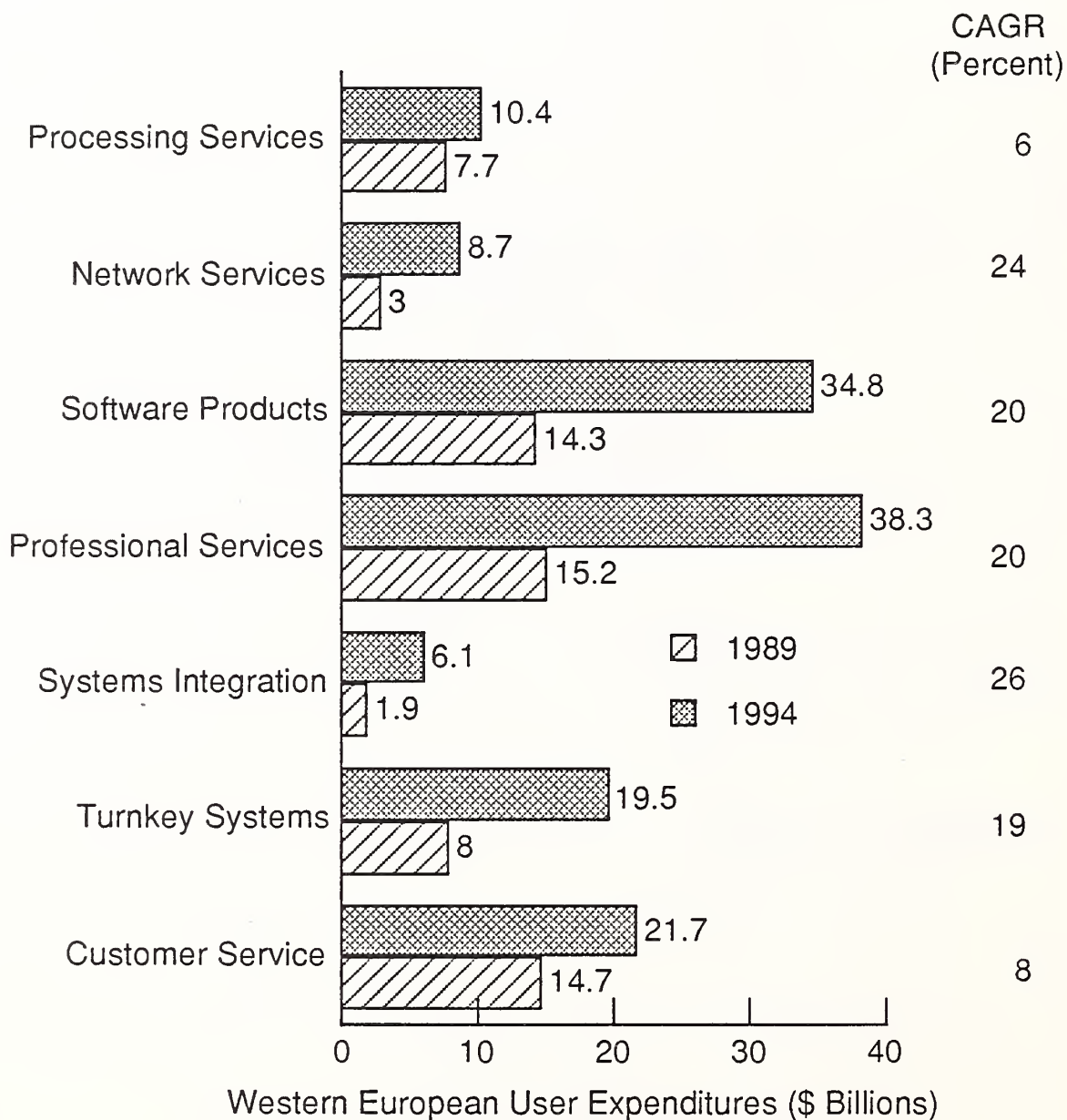
EXHIBIT II-4



The total overview of Western Europe's information services covers seven sectors, of which customer service (CS) is one, and which as we have shown currently accounts for 23%. The other six sectors, of which software PS and software products are the largest two, are all set out in Exhibit II-5 in bar chart form, with average growth rates set beside each bar.

EXHIBIT II-5

### Comparing Solution Opportunities



The wealth of opportunities in all these service sectors is currently driving the whole software and services market to grow at almost 17% per annum, more than doubling the \$64 billion measured in 1989.

## C

### Change Is Everywhere

The changing environment which all business are currently experiencing is caused by several mutually reinforcing driving forces:

- Technology is offering businessmen and technologists alike new ways of implementing old processes, and new processes and products which were previously only dreamt of.
- Information systems are a powerful intermediate force for change, aiding technology and aiding businesses which exploit technology.
- The business, political, social and economic climates are all interacting with each other to accelerate the discovery of new ways of doing and making things and are offering new ways to exploit the possibilities.

Feedback mechanisms in society are speeding up the processes of change listed in Exhibit II-6.

#### EXHIBIT II-6

### Changing Environments The Business of Business

- Driving Forces
  - Technology
  - Information systems
  - Environment
- Feedback quickens pace
- Data-driven
- Mission criticality
- Globalisation
- Niche marketing

- New information systems are now data-driven, not function driven. This increases their potential for re-use.
- Information systems are mission-critical to their parent organisations.

- Many markets are becoming global.
- Everyone still wants a unique solution if it can be made affordable.

Customer service is responding to its own set of pressures and producing new types of service in response to changing user needs. The keynotes, which are summarised in Exhibit II-7, include:

- Increased responsiveness through a combination of automation and people skills
- Flexible, comprehensive service portfolios to counter competitive pressure
- Recognition that quality of service is always a requirement whatever the customer needs happen to be today
- Customer needs are changing continually.

EXHIBIT II-7

### The Changing Face of Customer Service

- Pressures
  - To be more automated
  - To be more responsive
  - People and knowledge
  - Costs and competition
- Remarket/Relaunch
  - Portfolio
  - Flexibility of options
  - Quality counters price
- Changing User Needs

## D

### The Nature of the Customer Service Response

One of the most obvious changes that CS is encountering is the shortening of product lifetimes. Estimates put hardware product life cycles as low as eighteen months, while software trends are experiencing the paradoxical phenomenon that though software systems have to last for several years in the maintenance phase, systems are almost never re-



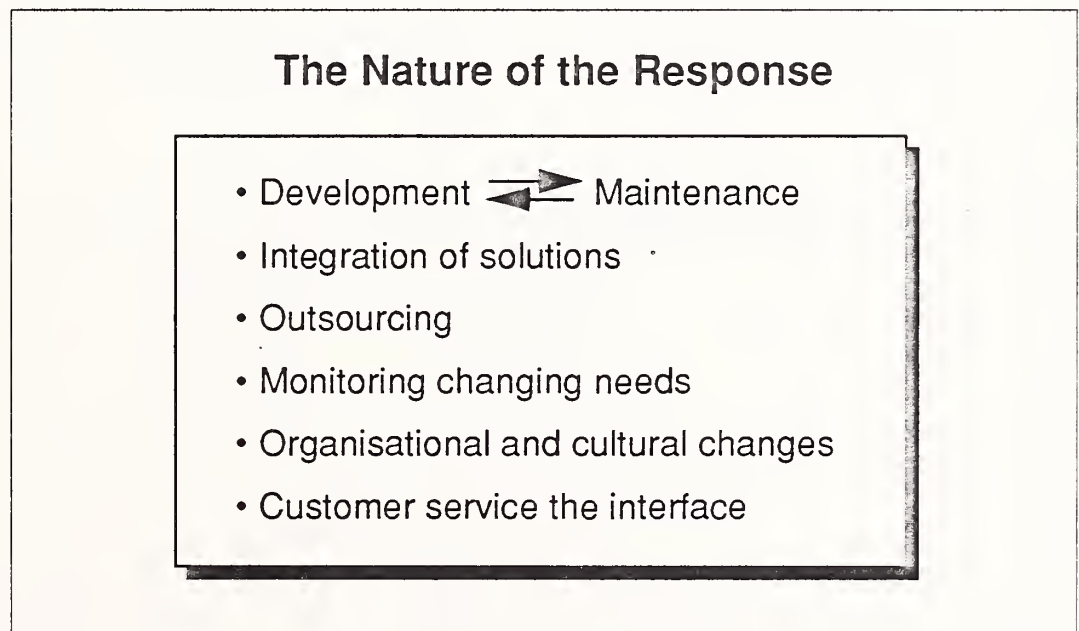
garded as stable. Continual enhancement of applications and fast-changing hardware platforms combine to make for a blurred distinction between the development and the maintenance activities. Hence, there is a need for a sophisticated customer interface to monitor users as they cycle faster through generations of systems.

A number of approaches have appeared in response to the modern environment of continual, dynamic refreshment:

- Solutions of all sorts are preferred to products.
- Solutions need to be integrated from various sources.
- Outsourcing of solutions or parts of solutions is today wholly acceptable in all types of business.
- Structural changes are taking place in organisations in order to be able to respond more rapidly and more accurately to changing user needs.

Exhibit II-8 lists these developments, as well as INPUT's belief that structural change requires cultural change on the part of CS operations, in the minds of staff and management:

EXHIBIT II-8



- CS must see itself as the manager of the total customer interface.
- CS must raise its thinking to the level of corporate objectives, or not expect the same degree of opportunity for growth to be presented.

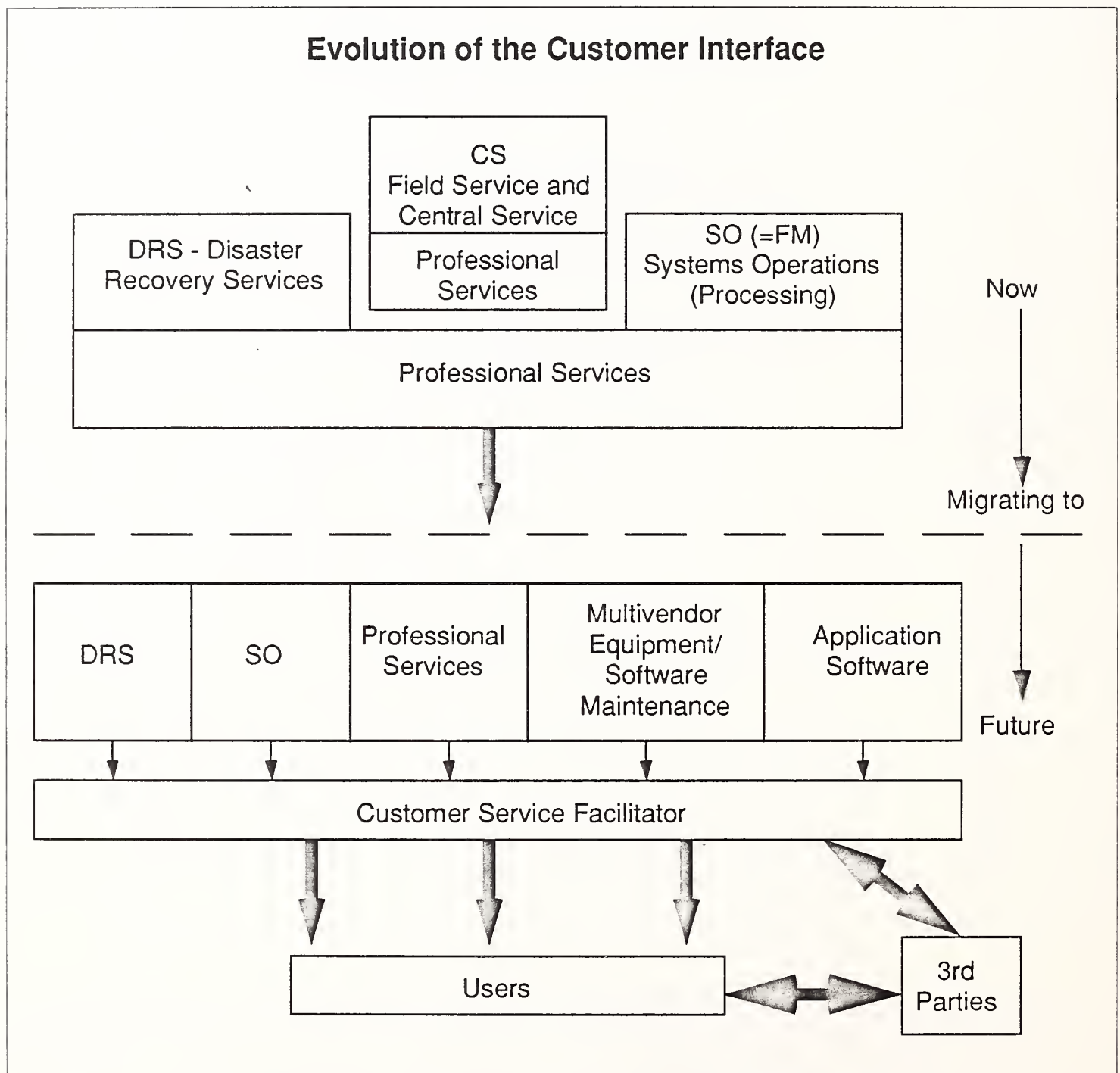
The key to achieving this reorientation of thinking is to view the customer service interface as an enabling set of functions which:

- Present ever-changing customer needs to management

- Allow for the services needed to satisfy them to be delivered across this interface

In the CS department, INPUT has named this set of functions the Customer Service Facilitator. Exhibit II-9 illustrates the organisational and cultural migration which needs to take place to move from today's modular structures into tomorrow's seamless CS environment.

EXHIBIT II-9



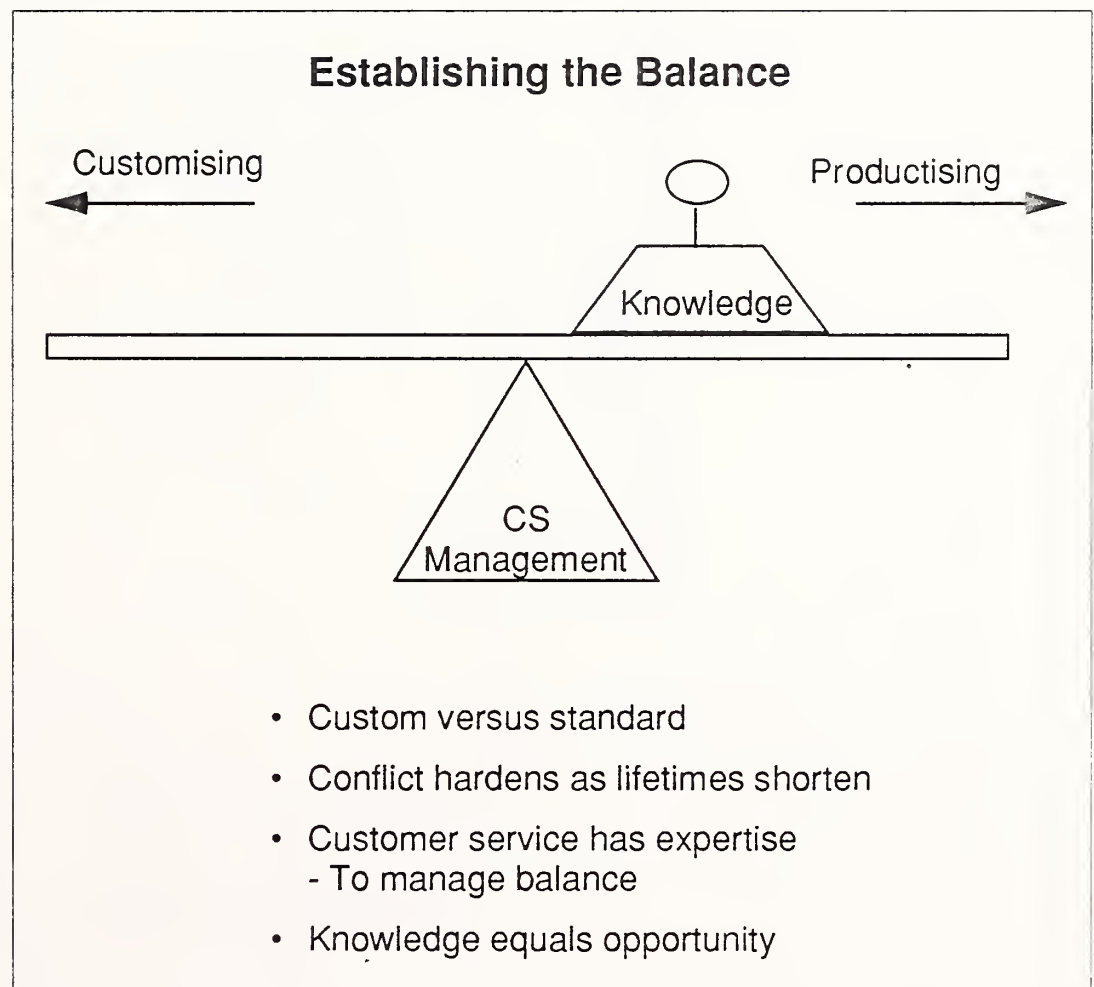
In this environment, development and maintenance needs can be continuously met, as user systems come in for refit/refreshment, on a number of tactical and strategic levels in an integrated enterprise structure.

The four organisations, whose tentative first steps in this direction are described in this report, have moved away from traditional CS in a number of different ways. None of them have moved far.

Exhibit II-10 illustrates how INPUT envisages CS culture embracing this new remit over the next decade:

- The basic paradox to resolve is how to customise using standard blocks. This becomes more difficult as lifetimes decrease.
- Customer service has the training and tradition for the task of balancing service level against cost for satisfactory profit.
- The key new component for maximising opportunity in the 1990s will be knowledge.

EXHIBIT II-10

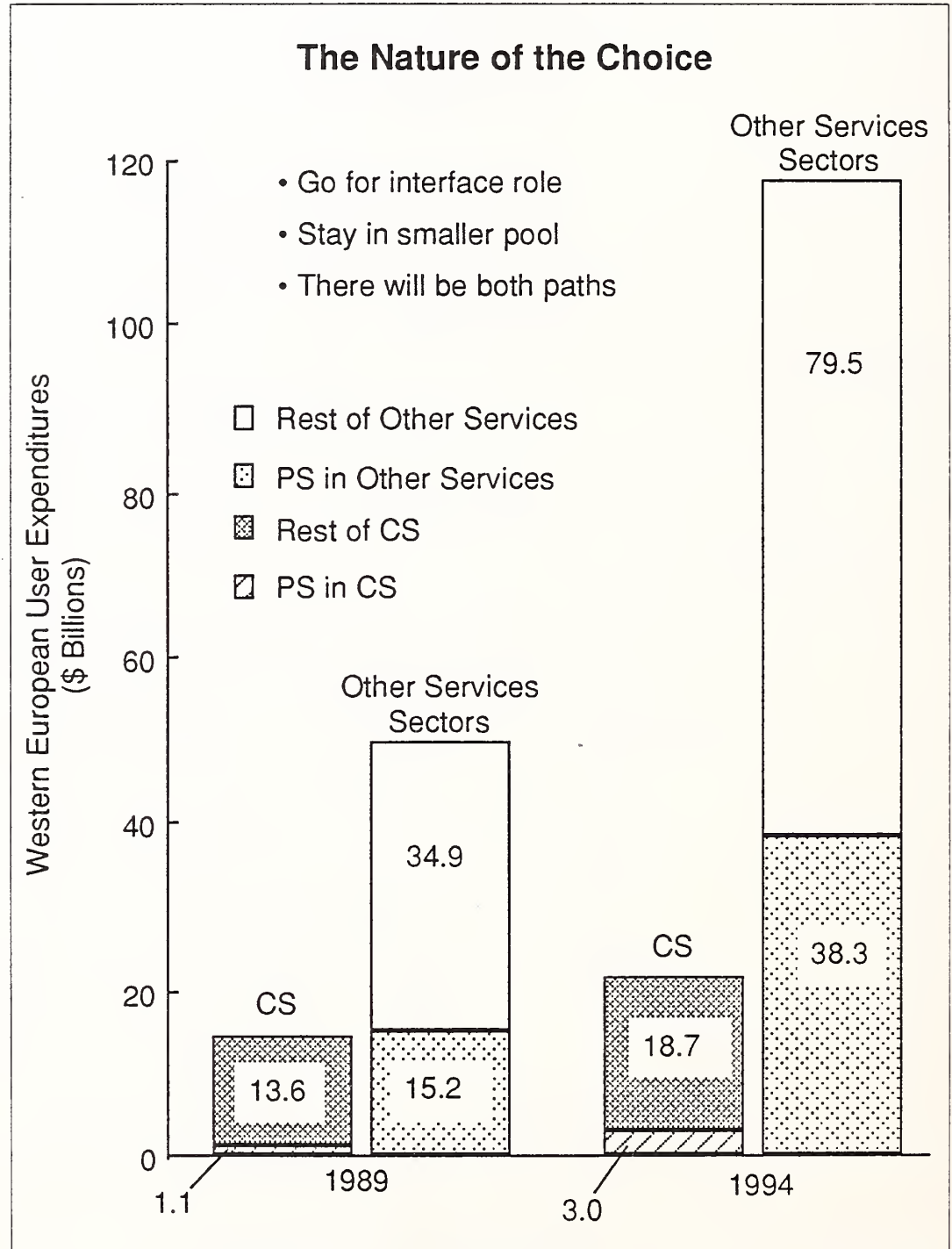


This knowledge of user applications and needs and their matching with vendor resources will require new management techniques now only dimly perceived:

- Network-based monitoring systems
- People-oriented objectives in less hierarchical structures
- Network-delivered solutions

The nature of the choice facing customer service management is such that it can either go for the high ground of managing the customer interface or stay in a specialist role managing field service and supplementary revenue-boosting activities. Exhibit II-11 shows in absolute terms what the choice means.

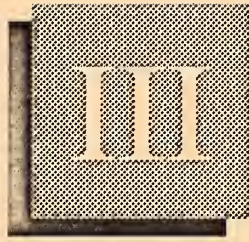
EXHIBIT II-11



- Stay in a segment approaching \$20 billion in 1994, and make a comfortable living in a specialist, equipment-oriented sector.
- Reach for a managing role in a market worth almost \$120 billion by 1994.



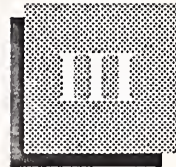




# Computer Services Markets







## Computer Services Markets

This chapter contains an overview of all market sectors in the industry which are concerned with delivering computer services to computer users. It therefore excludes any discussion of the equipment and computing accessory products sectors.

The objective of the chapter is to show customer service (CS) as part of the overall market for delivering services to users.

### A

#### Customer Service Market

Customer service is a traditional market centred on the field maintenance operation. During the 1980s the functions of field service have changed as hardware reliability has increased. Other revenue streams have attracted management attention as potential sources of growth for the CS function.

- Support of systems software has become progressively integrated with hardware support, as operating and utility software gain in product functionality and maintainability.
- Professional services is the generic term to cover extra chargeable services associated with installation, commissioning, and the hardware-related environment.
- Education and training in all areas of hardware installation and operation is another traditional activity undertaken in the field service environment.

Exhibit III-1 summarises the customer services market in Western Europe, showing its breakdown into four sectors, each with its associated growth rate of the five-year period to 1994. The key factors which relate to each sector are:

## EXHIBIT III-1

### Customer Services Market Western Europe

Sector	\$ Billions			1989-1994 CAGR (Percent)
	1988	1989	1994	
Equipment Maintenance	11.3	12.1	15.0	4
Software Support	0.8	1.0	2.3	20
Professional Services	0.8	1.0	3.0	24
Education and Training	0.5	0.6	1.4	18
Total	13.4	14.7	21.7	8

- Equipment maintenance is essentially a low-growth area in which vendors expect to be progressively squeezed on price.
- System software support has a healthy 20% growth rate and will rise from its current 7% market share to an 11% share in 1994.
- Professional services is the fastest growing sector at 24% average annual growth. It comprises:
  - Planning services
  - Operational management services
  - Consultancy
  - Software evaluation
- Education and training has a remarkably good growth rate of 18% per annum, reflecting the continuing user need for guidance in an increasingly complex and changing hardware environment.

By 1994, equipment maintenance will have declined in importance from its current 82% market share to less than 70%. This slow decline underlines the challenge facing CS management:

- On the one hand, its dominant size will demand management attention, perhaps leaving insufficient time to develop new business streams.
- On the other hand, the pace of decline affords CS management the breathing space needed to reorientate its portfolio towards higher overall growth.

**B****Professional Services Market**

In addition to the professional services sector described just now as a young and growing part of customer service, there is the much wider area of professional services within the computer services industry. This massive segment of the market has experienced some of the highest growth rates in the industry in the last decade. It has consistently confounded the pessimists who forecast the flattening of its growth curve, and INPUT predicts a continuing healthy picture through the 1990s.

INPUT has researched the sectors that make up professional services in this wider sense. Four sectors are identified:

- IS consultancy covers the application of management consulting skills to assignments relating to information systems (IS) and telecommunications. It has experienced significant growth throughout the 1980s and has attracted attention during that period from many players who were, at the start of the decade, pursuing consulting activities outside the IS sector:
  - General management consultants
  - Accountancy firms
  - Computer equipment vendors

With a growth rate of 22% per annum, it is the fastest growing sector of professional services.

- Custom systems development has evolved from tailored systems analysis and programming activity. It now includes the hire of contract staff to undertake those tasks. Currently the dominant sector with a 76% share of professional services, it is forecast to maintain this leading role through 1994, having an average 20% per annum growth rate.
- Education and training covers all courses given by hardware suppliers or independent training companies on subjects relating to software systems and IS systems development, including software methodologies, tools, and other products. It is found to be growing slightly faster (at 19%) than the equivalent hardware-related education and training in the customer services sector, with which it slightly overlaps.
- Systems operations (professional services) covers the portion of the overall systems operations sector in which the vendor furnishes the user with a management function for his information processing and does so by providing the staff resources to run the operation on client-owned equipment. It is the smallest sector of the four.

Exhibit III-2 gives the current size and growth rate of the professional services sectors in tabular form.



## EXHIBIT III-2

Professional Services Market Western Europe				
Sector	\$ Billions			1989-1994 CAGR (Percent)
	1988	1989	1994	
IS Consultancy	1.6	1.9	5.1	22
Custom Software Development	9.6	11.6	28.6	20
Education and Training	1.3	1.6	4.1	21
Systems Operations (Professional Services)	0.1	0.15	0.5	24
Total (rounded)	12.6	15.2	38.3	20

The key aspects of professional services are:

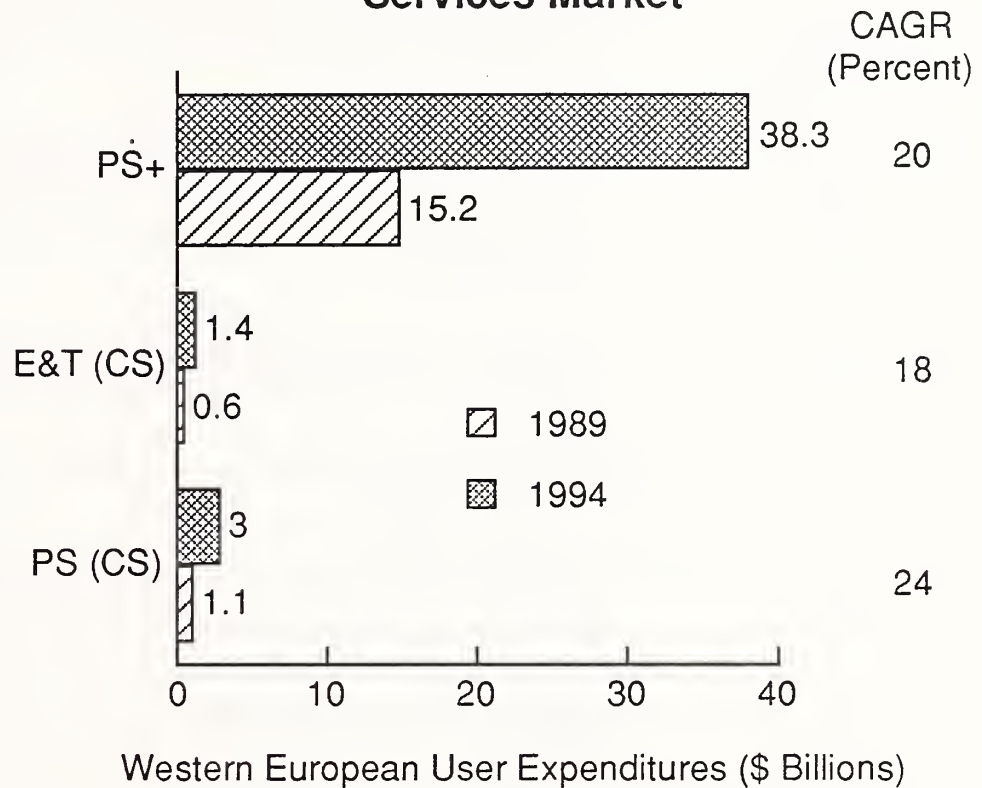
- All sectors are concerned with the provision of people-based services, and manpower recruitment and career enhancement are principal competitive weapons.
- Professional services growth is tied to salary rises and the endemic skills shortages in specific sectors, such as data communications.
- Professional services as a people-based market will be impacted by the growth of the software products sector, where applications packages and products appear more attractive than tailored systems projects with their long lead times and difficulty of specification.

Professional services companies are some of the most dynamic in the information services industry. They are market leaders, fuelling the growth of their own and adjacent sectors by supplying the service elements which can make all the difference between a useful and a wasted investment in automation.

Exhibit III-3 compares the different sizes and growth opportunities in professional services in customer service, and professional services in the wider software implementation area.

EXHIBIT III-3

### A Comparison of Other Services in the Customer Services Environment with the Total Professional Services Market



PS = Professional services part of the computer services market

PS (CS) = Professional services within the customer services environment

E&T (CS) = Education and training within the customer services environment

+ = Adjusted for overlap with E&T (CS)

## C

### Adjacent Market Sectors

Some adjacent market sectors have sprung to life over the last five years. They are additional to the sectors described so far and they all provide other mechanisms for delivering computer services to the user. The sectors described below relate to services delivered to IS and electronic data processing (EDP) management:

- Systems integration has grown out of the large and very large contracts awarded in the private and the public service sectors. These contracts have been awarded to large professional services vendors, and increasingly to the giants of the equipment supply sector, e.g., IBM, Unisys, and Siemens. The essential characteristic of the systems integration (SI) contract is that it represents a mix of product and service provision, for example:
  - Equipment to support a new application or to upgrade an old one
  - Software tailored or packaged, or a combination of both, to maintain the application
  - Equipment maintenance and any other supporting services, e.g., training, to ensure product availability and personnel competence

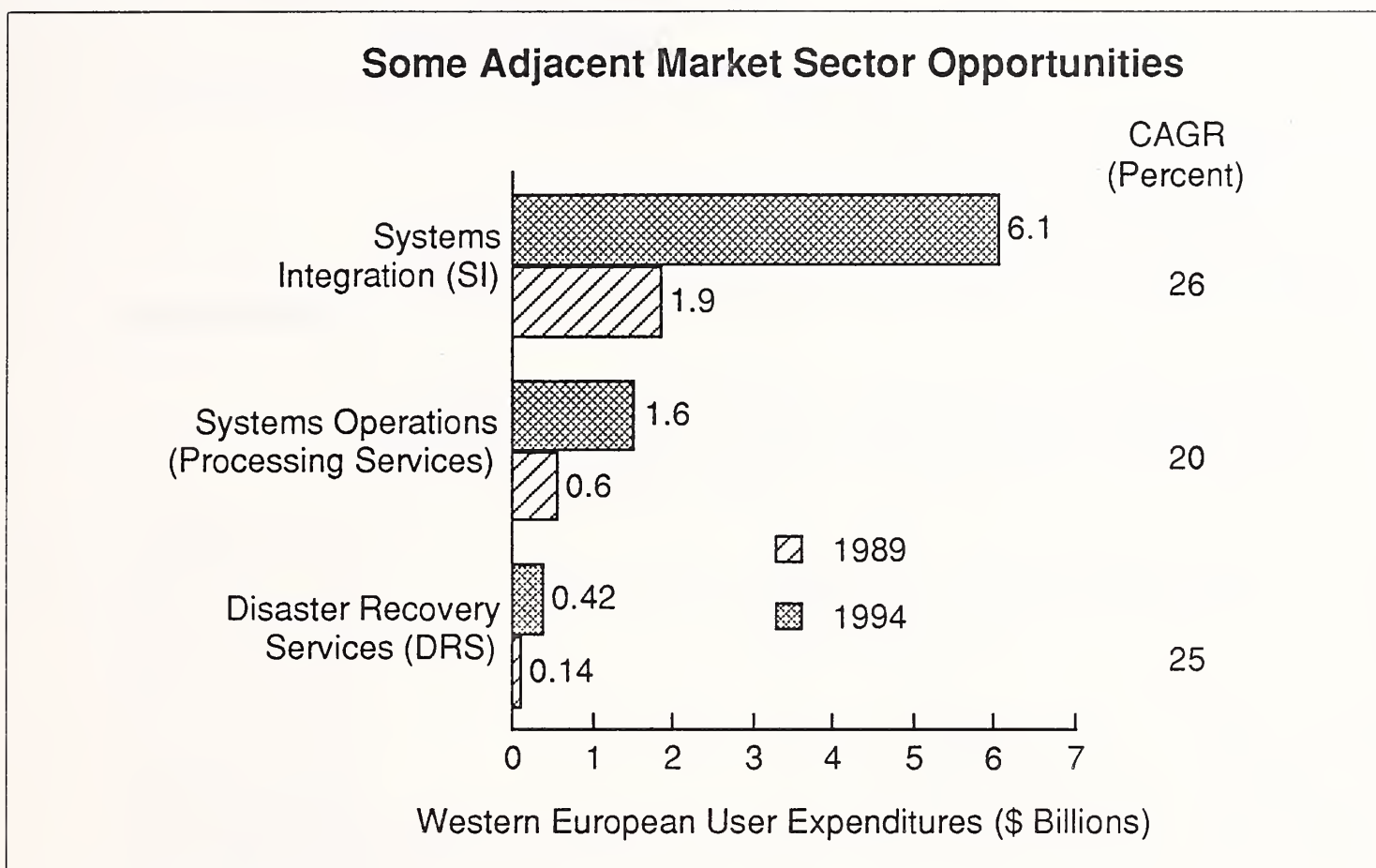
The SI contractor must bid the winning mix and then have or be able to manage the resources to supply it.

- Systems operations (SO) (processing services) is the twin of systems operations (professional services), already described in Section B. Under this service mechanism, the management of a user's information processing is delivered on a long-term contract, but the processing this time is performed on vendor-owned equipment.
- Disaster recovery services (DRS) are provided by vendors on vendor- or user-site located equipment. The essence of the service is to provide users with alternative hardware platforms on which to run their systems in the event of the occurrence of a disaster.

The bar chart in Exhibit III-4 allows for a comparison between these three adjacent markets:

- Systems integration (SI) is currently the largest sector and is growing fastest. Its annual growth of 26% will put it at over \$6 billion in revenues for 1994.
- SO (processing services) has a healthy growth rate of 17% and this will take it over the \$1.2 billion level in 1994.
- DRS is certainly the smallest of the three sectors but enjoys growth at 25% per annum and will account for \$415 million by 1994.

EXHIBIT III-4



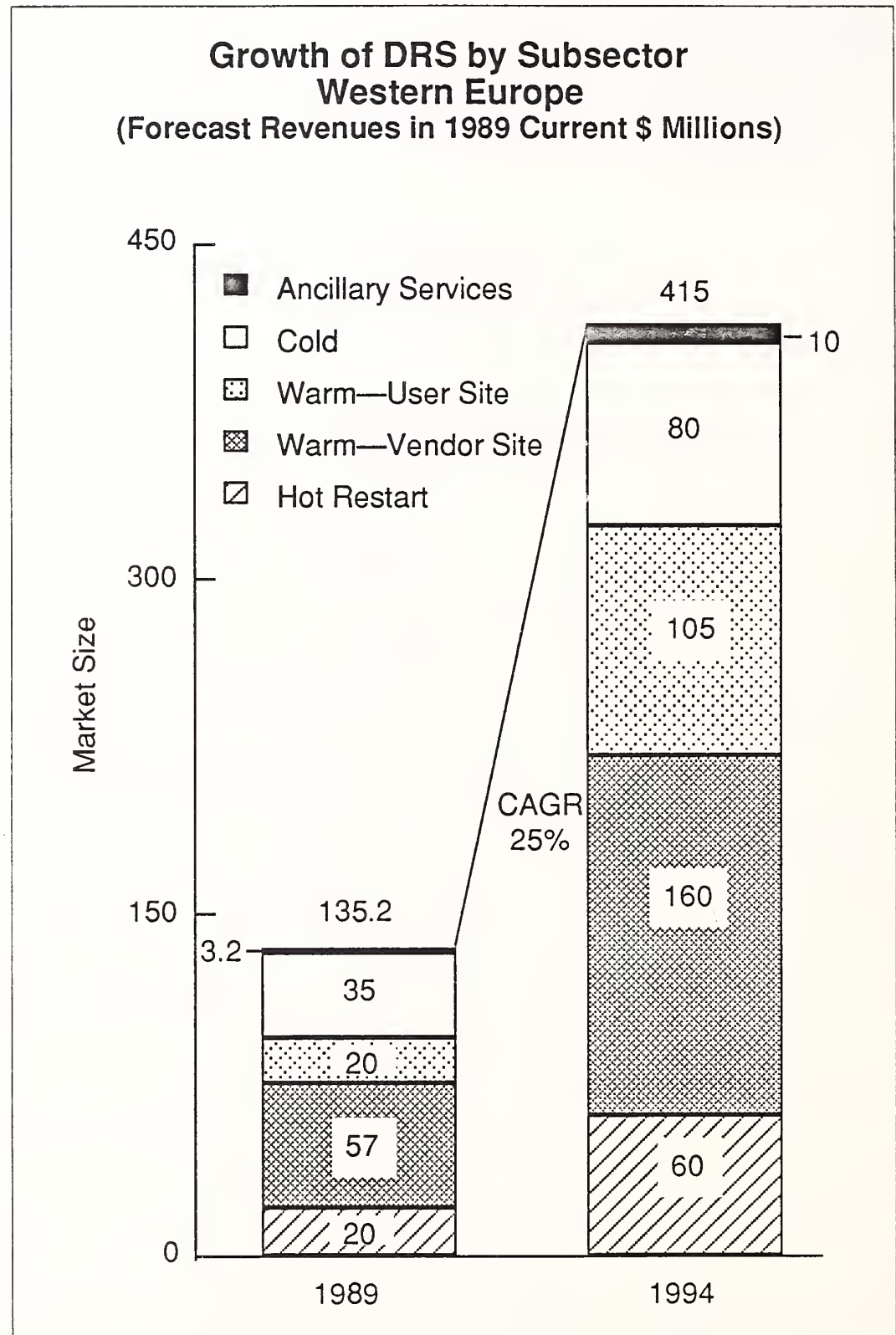
DRS is a service supplied by both independent vendors and equipment suppliers. When delivered by an equipment manufacturer, it is usually only provided as a backup service to his own user base and is not offered as a multivendor service. In this regard it is unlike independent maintenance (multivendor) offered by an equipment vendor to a user with a mixed equipment base on-site.

DRS is usually supplied by the equipment vendors through the customer service function, but sometimes in conjunction with a data centre or training/demonstration facility.

Exhibit III-5 charts the growth of the DRS sector across its five segments. The segments are differentiated by the delivery mode of the service with the "heat" of the segment being, in broad terms, inversely proportional to the response time of the delivery.



EXHIBIT III-5

**D****The Complete  
Computer Services  
Market**

If all service sectors corresponding to needs generated by the information user are included, there are four other major sectors which INPUT deals with in its European Computer Services Programme. These are:



- Processing services
- Network services
- Software products
- Turnkey systems

The first two sectors are delivered through vendor-owned equipment, to which value is added by processing client data or by distributing and exchanging information to and among users; the second two sectors involve products installed as part or all of a user's system, but that have accompanying service elements which distinguish them from pure equipment markets.

Exhibit III-6 summarises all the computer services markets in tabular form, showing a subtotal which excludes customer services revenues. For the full definitions of these seven sectors, the reader is referred to Appendix A.

EXHIBIT III-6

### The Complete Computer Services Market Western Europe

Sector	\$ Billions			1989-1994 CAGR (Percent)
	1988	1989	1994	
Processing Services	7.2	7.7	10.4	6
Network Services	2.2	3.0	8.7	24
Software Products	11.6	14.3	34.8	20
Professional Services	12.6	15.2	38.3	20
Systems Integration	1.5	1.9	6.1	26
Turnkey Systems	7.0	8.0	19.5	19
Subtotal	42.1	50.1	117.8	19
Customer Services	13.4	14.7	21.7	8

Customer services currently accounts for some 23% of the overall total but this proportion is due to fall to about 16% in five years' time. The challenge to CS management is obvious.

There are two areas of overlap between the customer services sector and the other service sectors:

- Education and training is measured by INPUT in two places, under professional services, and under CS. This is an overlap of at most \$200 million in 1989.
- System software support is measured under software products and under CS. Here the overlap is larger, about \$1 billion.

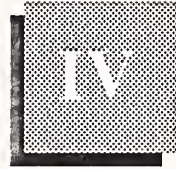
Taken together, these two amounts represent just over 2% of the total, and this in no way invalidates INPUT's exposé of the massive opportunity facing CS management.



# The Changing Environment







## The Changing Environment

The objective of this chapter is to show how technology and market forces are changing the parameters within which CS management will have to work in the future, if it is to avoid presiding over a shrinking share of the market. This is done by examining the environment under a number of headings:

- Driving forces in the industry
- Changes taking place in the customer services area
- The introduction of the service solution to business life
- The changing role of the professional services vendor

### A

#### Industry Driving Forces

Industry driving forces stem from the rapid pace of technological advance. This is not just affecting the particular products and services available for undertaking data processing and information systems tasks; it is also having an impact on the wider business environment. So the cycle is repeated as the tasks being requested of information technology (IT) contractors change in response to changing business requirements. The recursive effect of the application of technology via systems onto business life appears to be accelerating and not decelerating.

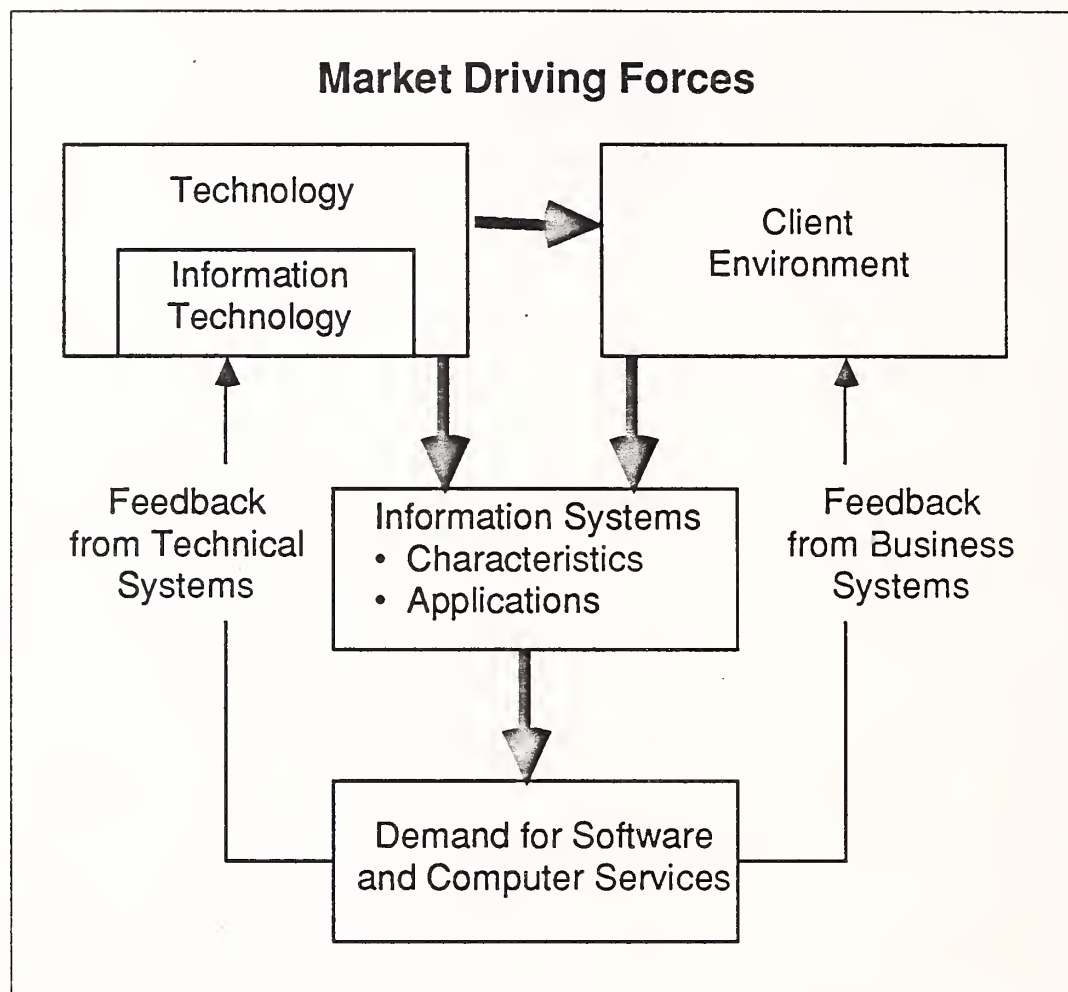
These dynamics are illustrated in Exhibit IV-1.

The driving forces of the computer services business are discussed below under the headings of:

- Technology
- Information systems changes
- Environmental change



EXHIBIT IV-1



## 1. Technology

The fundamental driving forces of the computer software and services industry are the rapid development of technology and the continuous advance of its application. The key areas of technology advance can be listed as:

- Integrated circuit technology development
- Data storage device advances, e.g., CD ROM
- Advances in telecommunications technology
- The development of sophisticated interfaces for information systems' input/output, leading eventually to natural language and speech recognition

These primary technology advances are creating new systems drivers, the most significant of which are listed in Exhibit IV-2. Relational and object-oriented data structures offer new possibilities for organising and accessing data. Open systems standards and multiplatform software

create opportunities to achieve far greater variety and flexibility in the design of information systems, and in the approach to the management of an organisation's information systems investment.

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**EXHIBIT IV-2**

### **Information Systems Drivers**

- Relational and post-relational data structures
- Open systems standards
- Multiplatform software
- Microcomputer sophistication
- Communications product range

The level of microcomputer sophistication being achieved, in terms of both size and cost, is impelling digital control over an ever-widening set of applications. The advance in the modular availability of communications products is also a key factor in widening the application of information systems.

These technology advances act as a driving force to systems development, through the following process. At the leading edge, innovative users will adopt new advanced products to the particular needs of their organisation—for example, the innovative and pioneering use by airlines of computer/telecommunication systems for real-time reservation systems. Once some users have clearly established a competitive advantage through such a process, their competitors are largely compelled to follow, and imitators will emerge from other industries. Sometimes the imitators do not achieve the same success as the originators. In other cases, innovative users of new technology fail, and it is the second-wave user that succeeds by learning from the mistakes of the pioneers.

## **2. Information Systems Changes**

The rapid technological advance in the computer industry has brought and will continue to bring fundamental changes to the range of computer applications and to the way they are managed. In general, we can typify this process of change over the last twenty years as follows:

- From relatively simple standalone systems to highly complex interrelated systems
- From homogeneous to heterogeneous, in respect to both vendors and types of equipment and software

- From relatively isolated “back office” systems applied to discrete areas of an organisation, to systems operating at the front-end and affecting virtually every aspect of the organisation with a need for communication between the different parts.

These changes have had two very powerful effects on the significance of information systems to an organisation. Firstly, they have made these systems indispensable to an organisation’s successful and continued operation; today’s systems can be described as “mission-critical.” Secondly, they have presented senior executives with the need to manage their application on a strategic level for the benefit of the business.

The information system has become a powerful agent for change in the way that an organisation conducts its affairs, competes with similar organisations and manages itself profitably. The information systems can be so tightly integrated into the operations of an organisation that they become the principal factor in determining the types of services and products that can be provided, particular examples being banks and airlines. There has been much discussion about the gaining of competitive advantage through the application of IT, and doubt has been cast as to how long such a competitive advantage can be sustained. Nevertheless, no organisation today can afford not to achieve parity with its competitors on basic information systems infrastructure.

The need for senior executives to exercise strategic management of information systems and their development is not a trivial point. Management is such a widely-used term in everyday parlance that it is easy to forget its deeper implications. Drucker, in his latest book, *The New Realities*, argues that it is a relatively new phenomenon. Prior to the middle of the nineteenth century, the practice of management did not really exist. Organisations were generally very small by today’s standards, and work was carried out under the supervision of chargehands. In parallel with this, one can argue that the data processing manager of the 1960s was really a chargehand given the job of running and supervising a particular activity that, apart from the chief financial officer, was not strategically managed by senior executives.

Today, the need for strategic management of information systems investment and development is clear, and we have witnessed the gradual elevation of this function within the user organisation.

At an operational level, the application of new technological developments presents management with considerable challenges:

- The challenge of adopting new technology successfully
- The challenge of integrating different technologies or different computer systems and communications networks



These challenges place heavy demands on the need for key technical skills and project management capabilities that in many cases are just not available within the user organisation.

There is another significant challenge that information systems management must face today that twenty years ago was not a major issue—systems maintenance. As systems have been built up continuously, have become more complex and more interrelated with the enterprise functions, so the task of maintaining them has grown. This has now become a major problem for the in-house information systems department. Professional services firms are beginning to desire substantial revenues from contracting to take responsibility for this function.

Since many existing systems are aging, it also follows that there exists an opportunity to redevelop them. In the future it can be expected that users may turn to outside contractors to help them modernise their existing information systems. Many existing systems remain isolated, not integrated with other systems, inaccessible, out of date, and difficult to maintain.

Another allied concept is that of system “refreshment” in which the vendor, with a long-term commitment to operate and maintain a client’s systems, undertakes to hand over at the end systems running on “state-of-the-art” hardware and software. This is a proactive operation of the client’s system, not a passive operation.

### **3. Environmental Changes**

Rapid advances in every aspect of science and technology are having considerable impact upon the overall environment within which all organisations must operate. As has often been commented upon, we now exist within an information-oriented society. Technology advance has made this a widespread phenomenon. This information orientation is creating a more competitive environment; it is changing the way that organisations are structured and is breaking down geographic and other market barriers.

Faster communication allows a more rapid response to consumer actions. This has the effect of increasing competition in markets placing emphasis on the need for more rapid change and development of products, as well as the need to reduce costs and develop more efficient ways of managing the business.

Organisations are consequently seeking to reduce their bureaucratic overhead, shorten their decision structures and time-scales, and of course to utilise information systems as the tools for achieving these ends.

A key phenomenon is the emergence of global markets. No longer do geographical and physical limitations restrict the potential of an organisation to its physical base.

Competitive conditions and the search for efficiency demand that producers seek commonality in basic product design and manufacture, but increasingly customise the delivered product—not only to suit ingrained buyer tastes and habits existing in different country markets, but to serve the competitive need to meet emerging niche requirements.

This phenomenon is clearly illustrated by using the example of the automobile industry. It can be observed in this fiercely competitive industry that automobile manufacturers are moving towards the following form:

- They are outsourcing more and more components, and demanding that they be delivered as “subassemblies” and readily assemblable components. Thus, in a manufacturing sense they are becoming systems integrators, taking standard components from which they can build complete systems.
- Their competitive edge—their position relative to competition in the marketplace—is determined by their product design and marketing capabilities, and increasingly involves product reliability and the company’s service image.

Within Europe, other environmental changes of considerable importance are the liberalisation of telecommunications, liberalisation of the financial markets, and the Single European Market Initiative (the 1992 phenomenon). Each of these developments is adding further elements of uncertainty to the organisational development plan. In summary, the environment within which organisations must operate today demonstrates:

- A need for rapid change, i.e., the capability for shortening the response time-scale to meet the challenge of uncertainty
- A new (or renewed) emphasis on quality, product design, and customer service as key competitive marketing factors

In order to achieve these objectives, organisational structures are changing, with emphasis switching to smaller companies and increased use of subcontractors.



**B****Customer Service Changes**

Customer service organisations are faced with an increasingly difficult challenge as the basis upon which their functions have evolved undergoes radical change. Exhibit IV-3 summarises some of the key technical and commercial factors bringing pressure to bear on management.

**EXHIBIT IV-3**

### Key Trends Influencing Customer Service—I

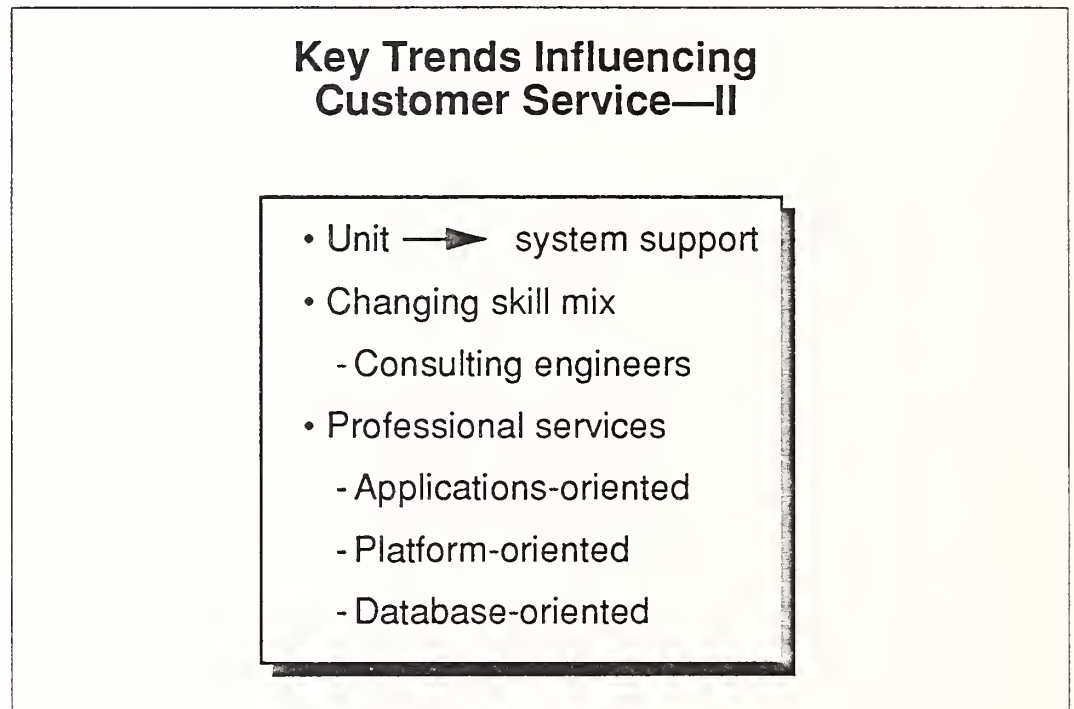
- Repair → replacement
- Remote/automated services
- Logistics more critical
- Pricing under pressure

- Product design changes have improved the efficiency of CS in diagnosing and resolving problems. Products are designed in such a manner that most on-site service is performed as board or component exchange, with the actual repair being done at a centralised workshop facility or after sending the faulty part back to the original source manufacturer.
- Most small and medium-sized systems and practically all of the large systems installed have either locally or remotely run diagnostic programs that speed and improve fault definition and isolation. Some diagnostic tools make use of expert systems technology and this practice is bound to spread. It has already extended into the support of system software where facilities to connect the user system to the vendor's technical resource centre can be used by either party to speed up problem definition and resolution by:
  - Interrogation of a vendor-hosted problems database
  - Remote running of a user's application in a "diagnostic cradle" supported on vendor data centre equipment
  - Downloading from vendor to user of temporary patches or of permanent fixes
- Logistics are a continuing concern to CS management as the cost of spare parts rises, relative to the falling cost of the computing power. Increasing fault tolerance in product designs and the use of predictive maintenance techniques (just-in-time spares location) are two ways to help lower the costs of spares holdings.

- Pressure on service pricing is expected to continue, as independent maintenance has become a standard feature of the service scene. With the growing acceptability of third-party maintenance, especially in the eyes of large organisations looking to gain economics of scale by issuing tenders for large arrays of multisourced equipment, pressure on prices can only be resisted by high-quality service offerings backed up by good information on competitive satisfaction ratings.

Exhibit IV-4 lists some of the ways in which these trends are affecting the people side of the CS business:

EXHIBIT IV-4



- Modularisation of design and the board replacement strategy for fault correction have banished the day of the device-specific engineer in the front line. The customer engineer is expected to care for the whole system, not just the particular unit which happens to be causing problems on the day in question.
- The increase in the population of dual-trained engineers (capable of diagnosis of hardware and software) is indicative of the way the skills required overall in the CS division are changing and will change further.

In the future, the field engineer will require less in-depth knowledge on hardware diagnosis and repair, but a greater breadth and depth of knowledge on software structure and support, network management and maintenance, and an overview of knowledge on other vendors' equipment when it is connected to one of his nominated installations. In addition, he will need to have improved interpersonal skills, as his advice and experience get called on both formally and informally through customer contact. He needs to become a consulting customer engineer.

- Specific applications knowledge at hardware, software, and systems levels is going to be required in order to expand professional services activities undertaken by CS departments. As the mix of equipment linked into heterogeneous networks becomes more varied, there is an opportunity to apply different types of specialist skills within the overall service portfolio:
  - Users will require advice on vendor equipment besides that of the main maintenance provider.
  - As open systems proliferate, so will the variants within the standard operating systems. "All systems will be open, but some systems will be more open than others." The name of the game in adding value to open systems will be how cleverly vendors can add their proprietary bells and whistles without destroying the overall system's conformance to standards. This will place a premium on professional skills and detailed, thorough experience of particular implementations—another consulting, performance evaluation and tuning opportunity area.
  - As hardware platforms strive for standards compliance and as relational databases become the industry norm, the database layer becomes the level at which incompatibility is concentrated. RDBMSs are the industry's latest non-standard element. This creates a third area of specialist opportunity. Finding the right skill mix puts a premium on the correct management of professional services resources.

Other fundamental driving forces will continue to impact all companies and all CS operations during the 1990s. Some affect business in general.

- Product life cycles are now shortened to two to three years, and even less for some products. This requires retraining engineers on a regular basis and increased effort in keeping track of changing user needs.
- There is a need to seek actively for product and service differentiators. The provision of total solutions has led to more specialisation and more customisation, which can help to differentiate, but on the other hand implies that more complete system support is necessary.
- Innovation must take into account the differing needs of vertical markets—government, financial services, distribution, manufacturing and business services.

The fight to serve narrower niche and vertical market segments leads to increased competition and new players entering markets and quickly establishing leading positions. In the CS area, large equipment vendors must not only compete with the independent maintainers, but must also respond to the challenges from:



- Their peers offering multivendor equipment support
- Distributors, OEMs, and other value-added resellers with whom stable relationships need to be worked out

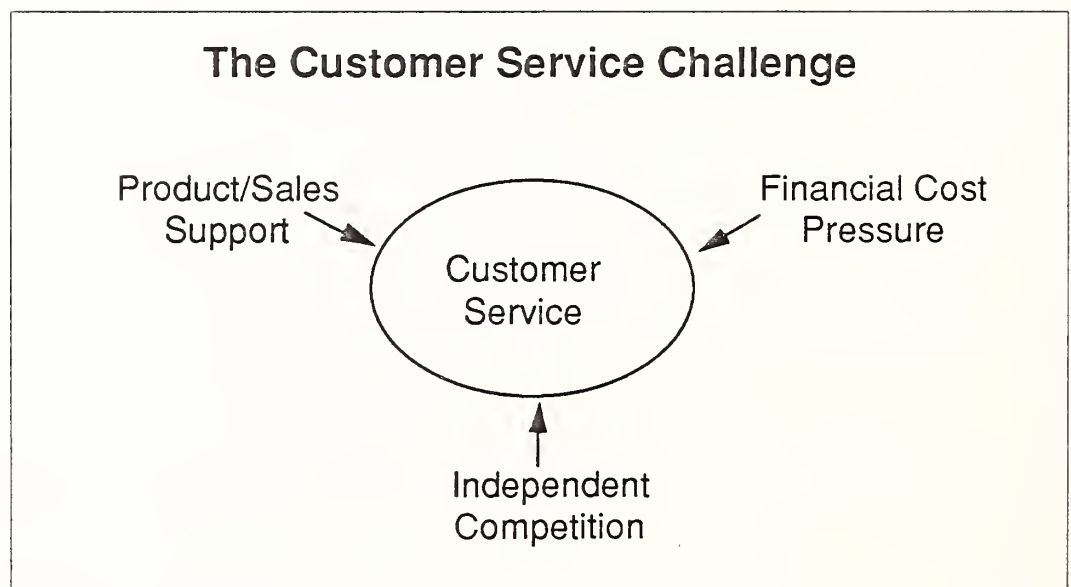
Despite the much publicised wave of mergers and acquisitions which have occurred over the last two or three years at the top of the computer services sector, there is still no sign of a genuine shakeout:

- Leading companies are not gaining a proportionately greater share of the services market.
- The number of participants continues to grow as alternative distribution channels come into play.

Viewed from within the CS environment, the pressures on the organisation can appear formidable. The inward looking and inward-tending pressures result from both the new forces and the traditional fire fighting activities of the field maintenance profession. These are summarised in Exhibit IV-5, which illustrates the factors tending to drive the CS function back into its entrenched mentalities of the 1980s:

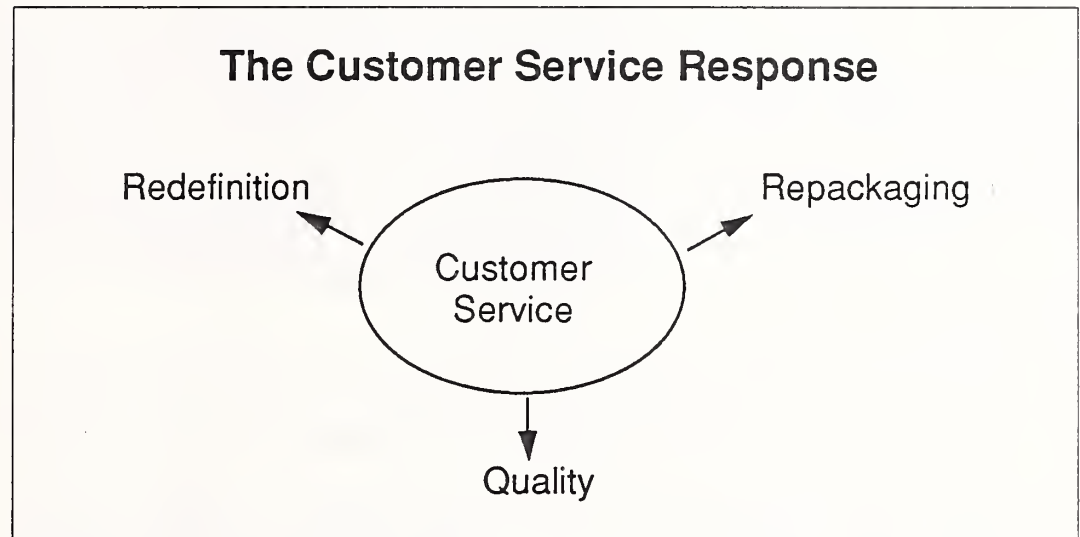
- Caring for equipment and keeping users up and running
- Intense attention to the detail of cost savings
- Increased awareness of the independent competitor

EXHIBIT IV-5



The response to this challenge on the part of CS management must be to break out from the established position using classical marketing strategies. A three-pronged attack is called for, as shown in Exhibit IV-6.

## EXHIBIT IV-6



- Repackage the customer service offerings on a regular basis in order to track changing customer needs.
- Understand the meaning and necessity of having a Quality Label programme to monitor and adjust to users' changing perception of the service profile.
- Lastly and perhaps most importantly, for the longer term of the CS operation, redefine the role of the function within the broader mission of the organisation in order to ensure a key position for the function within the corporate context.

**C****Service Solutions**

The progression of the computer industry is towards the provision of solutions to business problems. This progression has reached a state where the largest players in the market, who are the major equipment suppliers, feel that they must market themselves as providers of total solutions, not just of the supporting equipment platforms.

The origins of this trend lie in the increased complexity of information systems and of their criticality to business operations. Exhibit IV-7 contrasts the effects this trend is having on user and vendor:

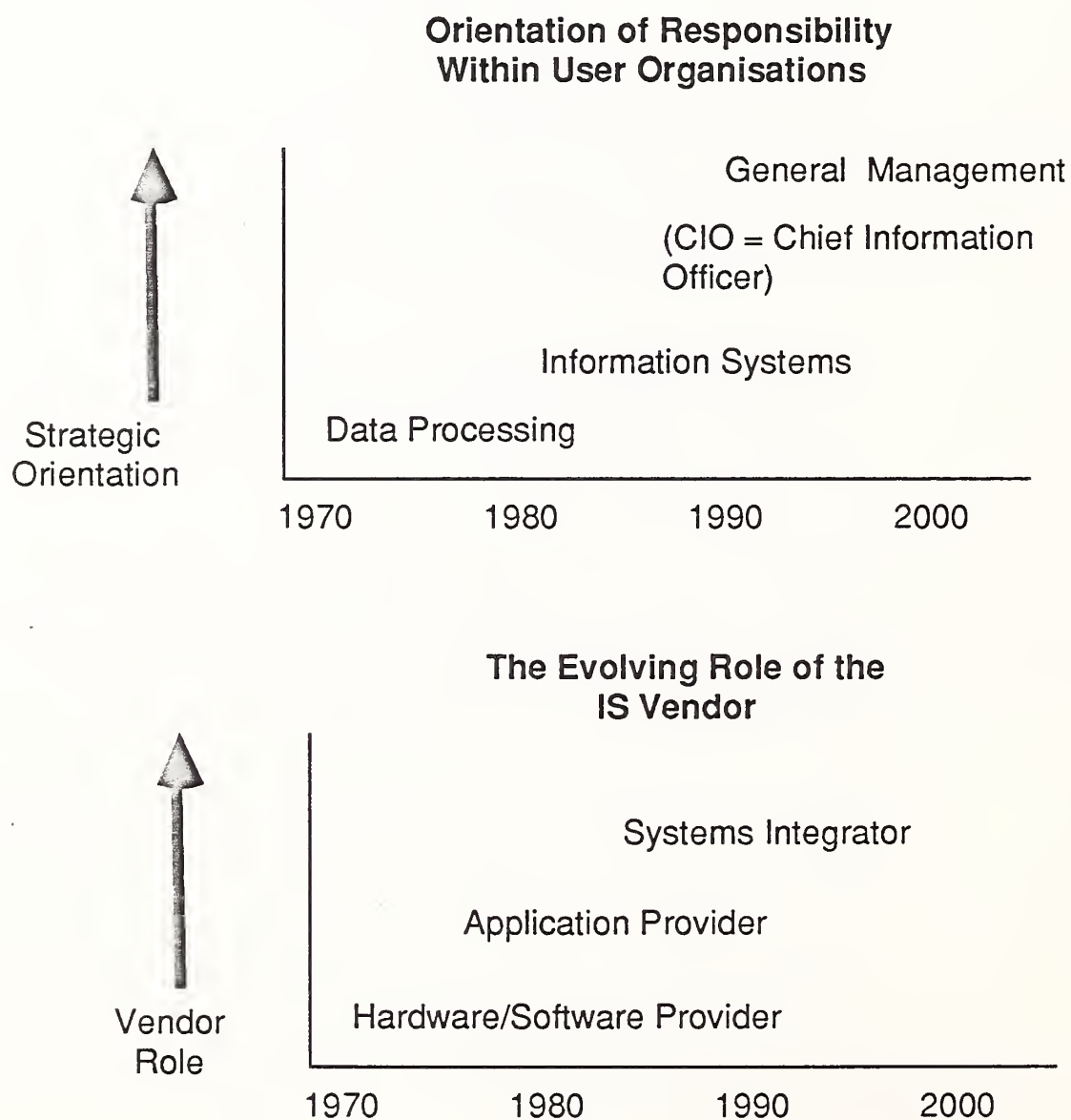
- In the top half of the chart, the strategic orientation of the location of user responsibility for IS overall within an organisation is seen to be moving away from the data processing manager as a staff function manager and into the boardroom, where the CIO concept makes no assumption about whether facilities are provided in-house or by contracted agencies.
- In the lower half of the chart, the corresponding trend in the supply industry is for the smaller organisations to supply the hardware and software components, while the medium-sized vendors handle systems



at the individual applications level, and the largest concerns are called up to provide top-level integrated systems covering multiple applications. At the top of the industry, therefore, traditional services companies are coming into contention with the large manufacturers, and this accounts for the mergers and acquisitions which are taking place among the services and software companies—SD Scicon, CAP Group and SEMA, Computer Associates taking over ADR and Cullinet, and Dun & Bradstreet purchasing MSA.

EXHIBIT IV-7

## Changing Emphases—User and Vendor

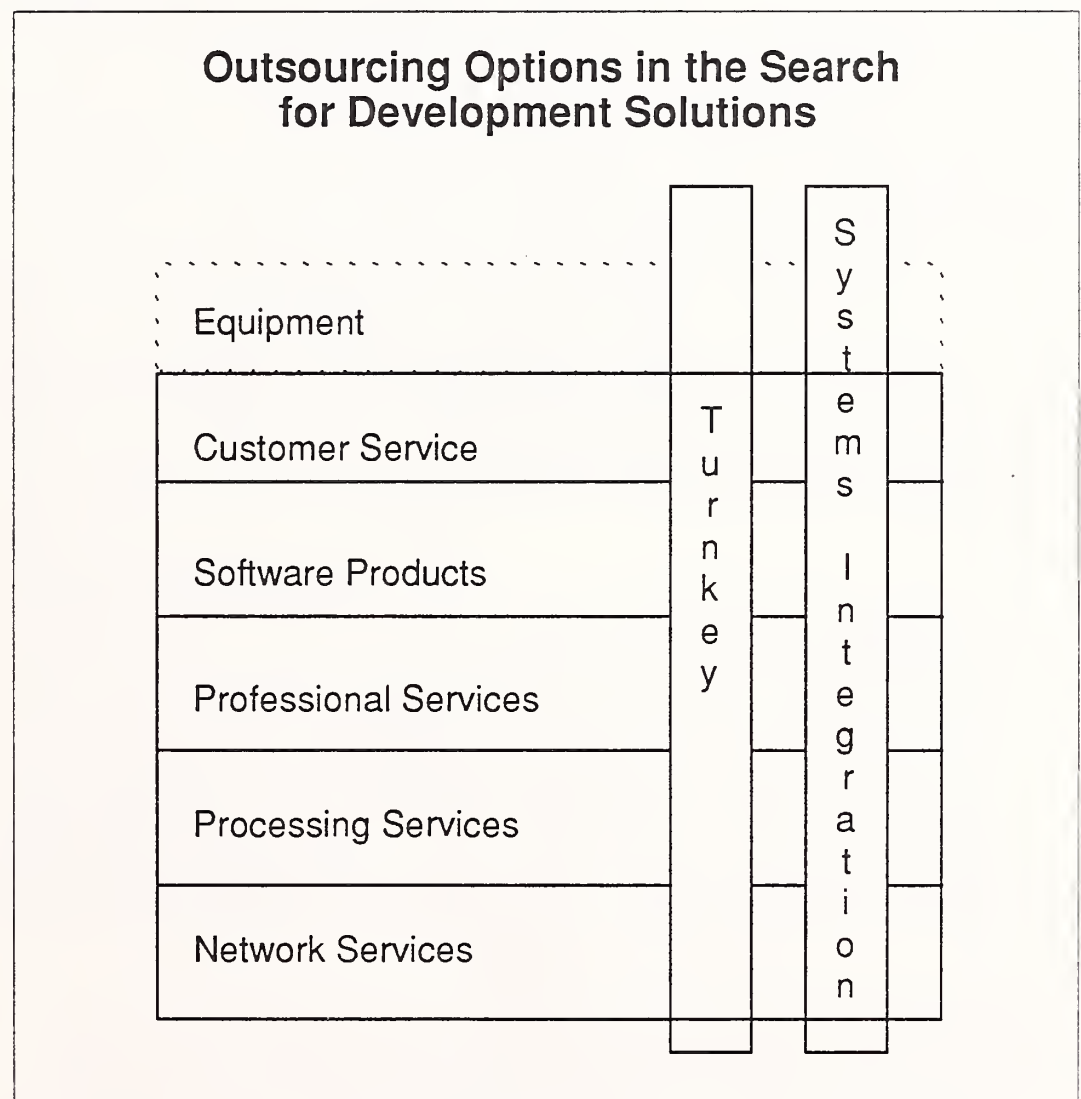


## 1. Development Solutions

Today's user is looking not just for equipment, but for a vendor who can provide a solution in terms of the business problem perceived and defined by the customer. Not only are system requirements more complex for in-house teams to develop on a sensible time-scale, but there is often a need for rare specialist skills which cannot be kept in-house for reasons of scarcity, training, and career development.

To the purchasing user, this all means that he has to re-examine his previous attitudes to the classic "make versus buy" decisions in a way which tends towards the "buy" pole and away from "making" things himself. This means moving towards outsourcing at different system levels. Exhibit IV-8 illustrates the options open to him when he looks to systems integrators and professional services vendors to provide solutions:

EXHIBIT IV-8



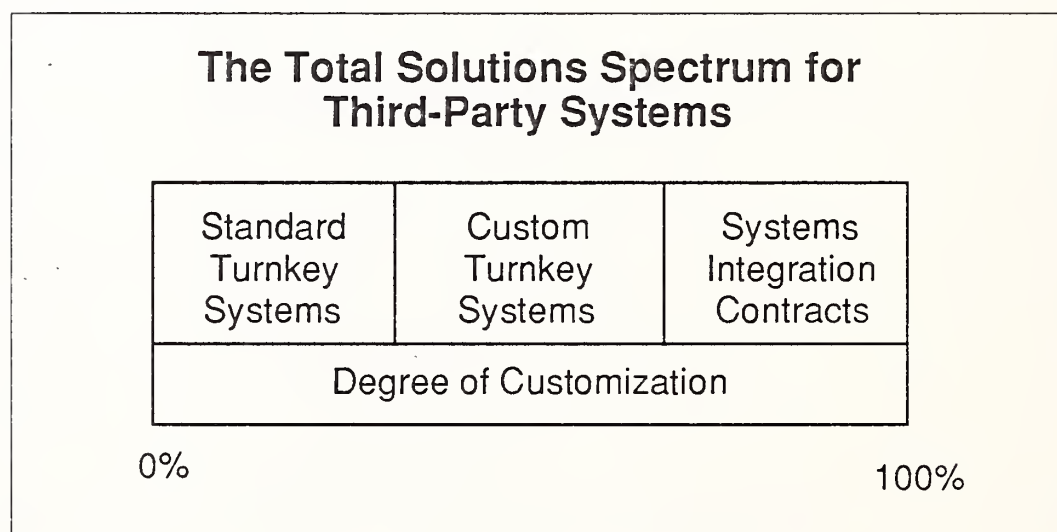
- Turnkey systems and systems integration (SI) contracts are ways of achieving his end. Systems integration contracts are usually larger contracts in which a greater amount of customisation is normal. Other-

wise, both approaches allow for solutions to be offered which include mixing and matching various component and delivery modes to provide the right level of solution:

- Application-level solutions
  - Departmental solutions
  - Networked solutions spanning multiple applications and multiple geographics
- There are several degrees of freedom open to the solution provider and his customer:
    - Processing and network services can be provided as intermediate problem-solving tools or as part of a long-term solution.
    - Turnkey systems can involve equipment title passing to one prime supplier or passing directly from manufacturer to user in parallel with traditional service supply.
    - Customer service must come as part of the post-sales, post-implementation support.

Exhibit IV-9 summarises the revival of customisation in terms of a spectrum approach, in which at one end a solution can be entirely made up of standard components and at the other, all services are deployed to provide a unique solution. The 0% and the 100% customisation extremities are increasingly rare in practice, once supply goes beyond that of equipment only.

EXHIBIT IV-9



## 2. Operational Solutions

There are currently three significant market subsectors offering operational (i.e., ongoing) solutions to business problems.

- Traditional processing services (which used to be called bureau work) attracted user expenditures of \$7.7 billion in 1989. Like customer service, processing services are only growing at single-figure rates (effectively, they are ex-growth). Like customer service, they have been seeking new growth points over the last decade, but migration of vendors into network services continues as telecommunications-based services converge with IS projects.
- Systems operations (processing services) is the fastest growing component of processing services overall. Although only taking \$0.2 billion of user expenditure in 1989, it is forecast to grow at 17% for the period to 1994, against the overall 6% CAGR of the total processing services sector.
- Within the customer service sector, the offering of total service solutions has growing acceptability with vendors. In recent INPUT research into the vendor community, over 90% of a sample of 16 vendors expected to need to offer tailored amounts of professional services and education and training into contracts which include traditional CS maintenance activities. The same number expected to have to include maintenance of other equipment besides standard data processing hardware, indicating a need to include coverage of all office equipment (copiers, typewriters, etc.) and of telecommunications equipment (PBX, fax and telex machines, and even the lines themselves).

The concept of the customised total service package goes hand-in-hand with the requirement for multivendor equipment maintenance and, therefore (theoretically at least), with outsourcing for the items of maintenance for which the prime contractor does not have trained in-house engineering staff.

## D

### Professional Services Changes

The 1980s have been the years of the PC, the same way that the 1970s were the years of the distributed minicomputer and the 1960s were the years of the mainframe. Each new generation of equipment has been ushered in with the promise that it would be more easily used by the nonprofessional end user and that therefore the requirement for the services of computing and data processing professionals would fade away, with the end user coming to build his own systems and programs. Nothing has been further from the truth. As each generation of equipment has followed on the footsteps of its predecessor:

- New languages to simplify systems development have been designed—Assembler, COBOL, FORTRAN, the ALGOL family and derivatives, ADA, C, C+, C++, PROLOG, the whole raft of DBMS-based 4GLs, and so on into the future, as new CASE environments are conceived.
- Old applications have been re-implemented to make use of the increased power and connectivity of computing engines.



- New applications which could not be implemented with one generation of technology have now been designed and put into use with later technology.

Because of the recursive feedback effect of software-based information systems (as illustrated in Exhibit IV-1), they would appear to be laden with possibilities. The only negative factors in the picture are:

- As systems and their applications become more sophisticated, the intellectual skills needed to build and control these systems tend not to keep pace with demand for them and therefore command ever-increasing prices. Professional services vendors are the purveyors of these skills on the open market.
- As systems become more sophisticated, they become more interrelated and interdependent, and also more critical to the survival of the organisations and people working them. At the start of the 1990s, very few industry observers (even those working on the most advanced software tools and methodologies) expect the need for professional services provided by professionals in professionally managed firms to diminish in the foreseeable future. INPUT forecasts professional services growth to equal 20% per annum into the mid-1990s.

The trends in professional services, summarised in Exhibit IV-10, are:

- Although COBOL and FORTRAN are predominant development languages in terms of installed lines of code, new systems in the commercial field are increasingly being built using 4GLs.
- CASE technology, which originated in the military and industrial sector systems implemented by major systems houses, has had difficulty in transplanting to the average in-house EDP shop, where the philosophy (hammered out under daily delivery schedule pressures) has been: "I don't want it perfect, I want it now."
- Technology in hardware and software is changing so rapidly that retraining of in-house data processing (DP) professionals to keep up is an increasing problem, causing a chronic skills shortage and a premium on particular skills over a short time scale as product lifetimes decrease.
- Conformance to open standards is demanded by large users such as government and Fortune 500 companies, but standards cannot be evolved fast enough to keep up with new technology.
- Software products are becoming richer in functionality and reliability. Fully tailored systems are becoming a thing of the past as:



- Professional services vendors build on “kernel” systems developed to cover different sectors.
- In-house systems managers replace rambling, unstructured software edifices with modular systems built around proprietary packages, with customisation added to order by outside contractors or one’s own systems staff.
- The impact of the newer design techniques, particularly reverse and re-engineering methods being developed, will be to blur the distinction between development work and the maintenance of systems. In the future, the status of software maintenance will be enhanced by providing the same quality and a variety of tools as are becoming available to the systems analyst, designer, or programmer.

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EXHIBIT IV-10**Key Trends in Professional Services**

- Standard 3GLs give way to proprietary 4GLs
- Difficulties in implementing CASE technology
- Chronic skills shortage—especially in telecommunications
- The standards jungle
- Impact of software products
- Blurred distinction between system development and system maintenance

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**E****Summary**

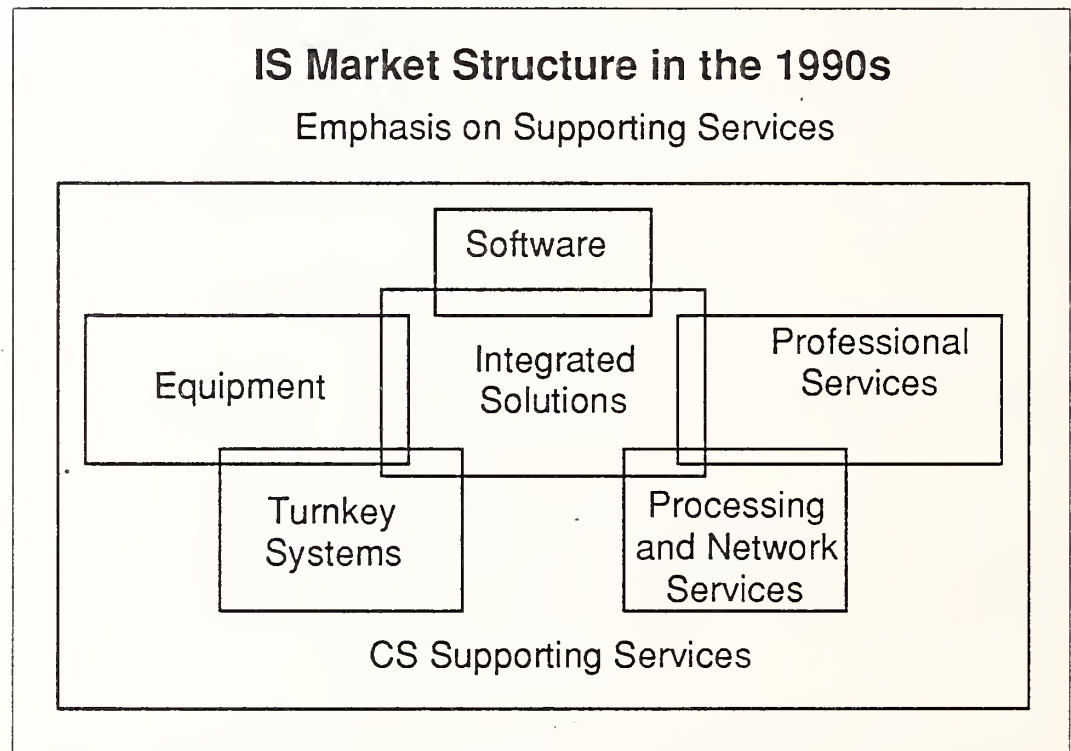
Information systems during the 1990s will depend for their success upon control of the process of integrating hardware, software, and business skills to further both the operational and the strategic objectives of organisations. A whole array of discrete supporting services will be required to maintain systems in an ongoing manner at three levels:

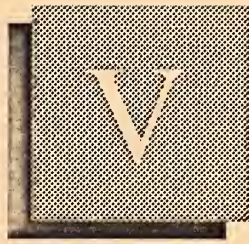
- Hardware availability of the platform and its connections to the networks
- Software products and customised systems implementing interconnected applications

- Business systems drawing on information accessed through the networks

Professional services vendors have established their credentials as the best choice for implementation of new software systems. They are increasingly looking to the maintenance of large systems to generate future growth. Customer service operations have the right background and training to take on the maintenance of total systems. They have already established their credentials for maintaining hardware platforms and system software layers. Can they now extend their capabilities outward into the applications software layer and the business systems which they support? The next and final chapter in this report will discuss the general requirement for strategic decisions to further the range of CS capability in this way. Exhibit IV-11 illustrates the way in which CS supporting services can become the cement required to set the future systems of the next decade.

EXHIBIT IV-11

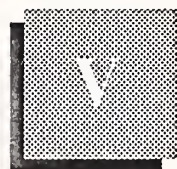




# The Customer Services Challenge







## The Customer Services Challenge

This chapter aims to define the challenge facing customer service management:

- By describing the changing customer interface
- By illustrating steps being taken along the path of change, by selected vendors visited during INPUT's 1989 research

The report concludes by giving INPUT's recommendations for accelerated movement of management from its present position to a more desirable one.

### A

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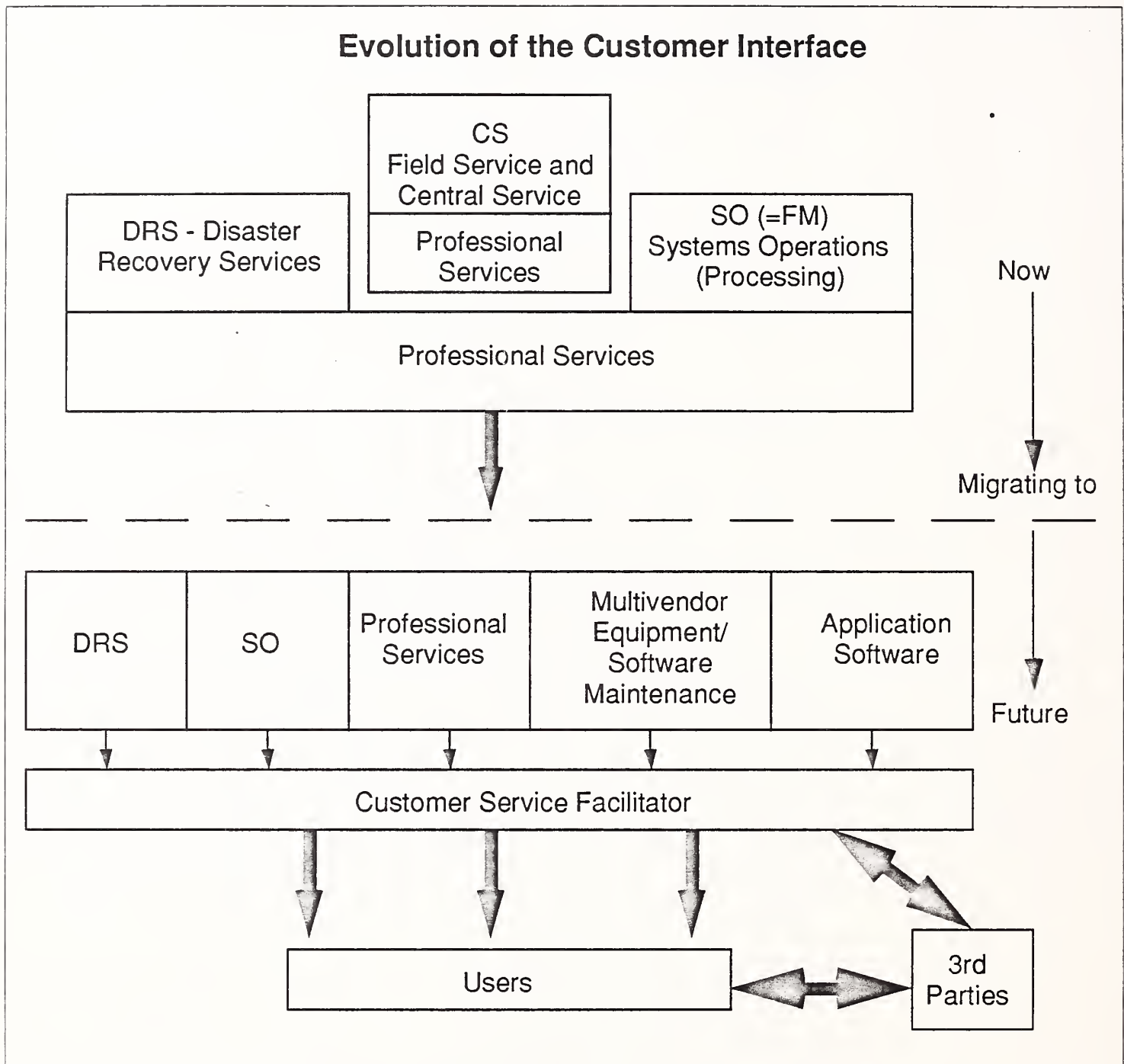
#### The Changing Customer Interface

The interface between a vendor and the installed base of customers establishes the quality of the relationship between the served and the server. The positive perception of this interface on the part of the customer is essential to the continued market presence of the whole organisation of which CS forms part.

This interface is now undergoing change in response to the driving forces described in the previous chapter. A slow migration is taking place from one state to another; the pace of this migration should and can be speeded up. How it should proceed is shown in Exhibit V-1, in which the top half of the diagram illustrates the present state of most major industry vendors; and the lower half shows the ideal of a flexible, general-purpose facilitating or enabling interface through a which variety of services can be delivered either singly or in suitable mixes:



EXHIBIT V-1



- The late 1980s' style of service delivery had services as discrete modules, each having a relationship with the other, but typically delivered in a variety of ways depending on user circumstances. New services such as DRS or management consulting are typically added either directly to CS or as discrete entities with their own management teams who need to establish their own identities in the eyes of the market.

Most discrete nonbasic services will be marketed to the installed customer base in the first place, thus limiting their initial functionality and, possibly, their ability to be generalised for a wider customer base.

Professional services, in particular, is the area where application-related and platform-related services can come all too easily to be delivered separately, missing the opportunity to capitalise on skills.

- The new style of service delivery for the 1990s should proceed through the customer service facilitation mechanism which will enable best use to be made of knowledge on either side of the customer interface:
  - Knowledge on the vendor's side of what services can be delivered (platform, applications, industry orientations, time-scales, short term resource difficulties, etc.); and knowledge of what users and potential users might require, gained through detailed contact with user management and employees
  - Knowledge on the user's side of what is available and how readily available it is, gained through day-to-day contact with the vendor's CS personnel whose credibility, know-how, and performance can be and should be assessed

The reasons for the need to migrate from one mode of operating the customer service interface to the other have already been described in Chapter IV.

- Systems have become mission-critical.
- Systems are now more complex and interrelated.
- Staff skills are at a premium and shortages of trained and experienced staff are chronic.
- Users are more demanding because they are more knowledgeable.
- Users need custom solutions to drive their businesses along mission paths different from those of their rivals.
- Software has taken over from hardware as the key differentiator of vendor offerings. As software becomes more productised, it loses its ability to differentiate unless it is knowledge-driven by interchange of know-how between user and vendor staff.

Knowledge, therefore, but knowledge encapsulated in and delivered through software is the key differentiator for the 1990s. Managing this knowledge interface is what CS management must accept as the challenge.

**B****Responding to  
Change**

Most experienced CS managers in the information systems business have been making strenuous efforts to respond to the pressures on service by increasing marketing visibility and by developing a range of products to fit their service portfolios. In this section, the cases of four well-known suppliers whose names are famous for their equipment and systems are examined in outline. The outline sketch given in each case includes the way in which response to changing circumstances has affected the organisation's customer interface. The companies are not named to preserve confidentiality.

**1. A Large Manufacturer with Multiple Product Lines**

This supplier has a broad range of equipment, from multiprocessor large systems down to desktop PCs which can be used in single or multiuser mode. Although most systems run on their own proprietary operating systems, for several years the company has backed the industry standard open systems initiatives for OSI and UNIX.

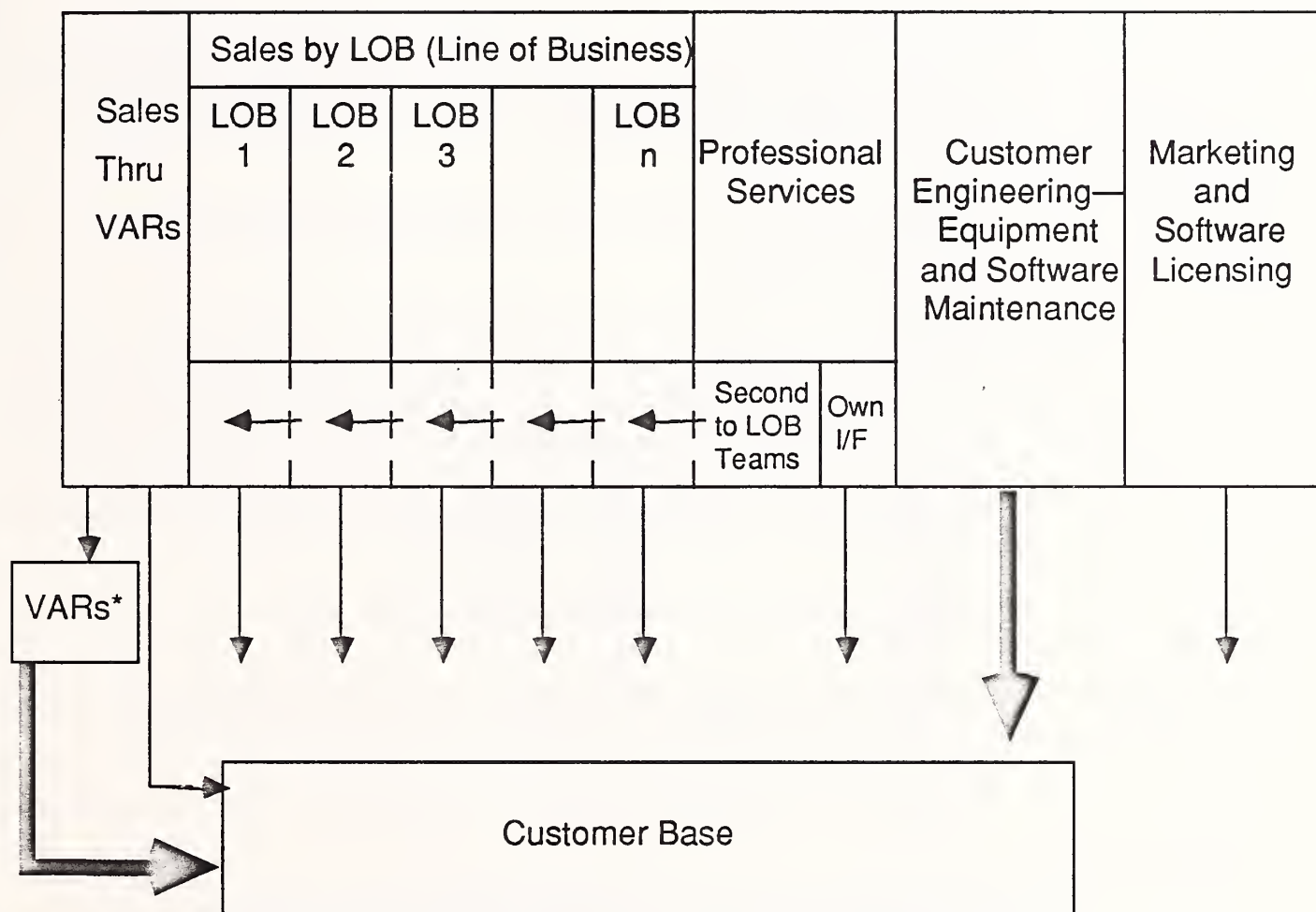
Exhibit V-2 shows in simplified diagrammatic form how this organisation has structured itself in one country to implement the total solutions approach, a concept it embraced with enthusiasm a few years ago when, by contrast, some of its major competitors were busy developing fruitful relationships with alternative distribution channels:

- Systems are sold through a handful of line of business (LOB) direct sales channels.
- Software products for system and applications programming are licensed in a number of different ways, some of which date back to earlier product lines sold originally by companies whose operations were integrated after merger or acquisition.
- Customer engineering covers all hardware and software maintenance, as well as the normal range of installation and commissioning services and accounts, for around 23% of the revenues from the country in question.
- Professional services (PS) is a relatively new division, which currently accounts for 13% of country revenues and was set up as a separate division specifically to enter the growing professional services sector. It works in two ways:
  - LOB teams include their own professional services staff, but these may be supplemented by staff members from the central professional services division in order to work on specific projects for each LOBs customers.

## EXHIBIT V-2

**The Customer Interface—Example 1**

(A Large Manufacturer with Multiple Product Lines—Typical Country Level Interfaces)



\* There are approximately 100 VARs supported.

- Complete projects can be undertaken by PS in its own right for any customer or non-customer. These projects would normally not be in conjunction with a hardware sale, although add-on kits might be required.
- One LOB handles the group of value-added resellers (VARs) which numbers about 100. The company admits that it has not yet managed its VAR relationships very positively.



The company is reported to be decreasing the number of central PS staff in favour of building up the PS teams in the LOBs. INPUT's assessment of this organisation is both positive and negative:

- Positively, the company has recognised the need for a services approach, and has implemented policies to increase revenues from services sources—especially professional services, disaster recovery, and general processing services.
- Negatively, it has not yet recognised the need for an integrated customer service interface, across which requests for services should flow inwards to the company and delivery of services should be implemented outwards.

## **2. An Equipment Manufacturer and Supplier Specialising in Midrange Systems**

This vendor, although supplying some high-end large commercial mainframes, is best known for its midrange systems on both proprietary and open operating systems. These systems have been developed on a range of standard platforms, some of which are marketed on an OEM basis to other major vendors. In mid-1989, its open systems component of sales was starting to outstrip the sales of proprietary systems. Close links with VARs have been cultivated for several years.

Exhibit V-3 shows the customer interface in outline.

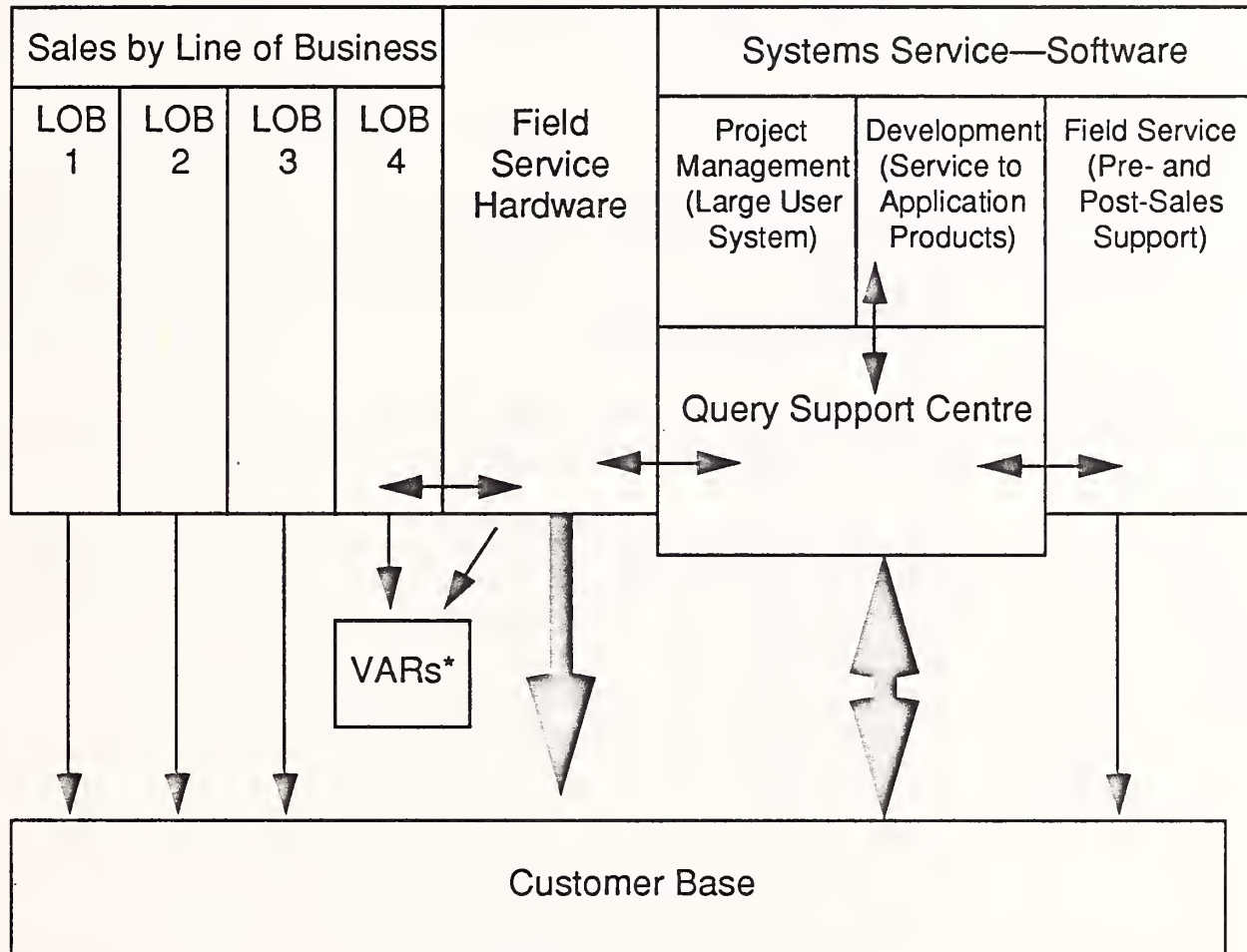
- Systems are directly sold through vertical industry-defined sales areas, one of which handles the eighty or so independent resellers.
- Hardware maintenance is carried out independently of software maintenance.
- A range of software services is provided within a separate division:
  - Software products, both system and applications
  - Custom-built software in specific industry segments, e.g., financial systems
  - Field and central support for software products and tailored systems
  - The support centre, channelling query requests to the on-duty specialist in whatever area of hardware or software technology. The support centre management system aims to have the correct specialist alerted with full written query log and site history within 15 minutes.



## EXHIBIT V-3

**The Customer Interface—Example 2**

(A Manufacturer Specialising in Midrange Systems—Typical Country Level Interfaces)



\* There are approximately 80 VARs producing 40% of revenue in the country.

INPUT's assessment of this company's position and thrust is again both positive and negative. In this instance there are more positive factors.

- However, on the negative side, this organisation made little or no effort to break down the structural and cultural barriers between hardware and software support engineers.
- Also on the negative side, the company has only moved to integrate its VAR relationships on the sales side when pressure from success in selling through these channels made it imperative.

- On the positive side, the company has built up and integrated a great deal of detailed experience in how to handle customers' systems through the complete life cycle from conception to implementation and eventually to renewal time. In this sense, its systems house operation is well-integrated with the overall organisation, and field service is seen as a modular, on-demand function to be called up from within a services-oriented customer interface. This system allows for easy use of outside contractors for multivendor site maintenance—but this is a relatively small part of the business.

### **3. A Large Manufacturer with an Integrated Product Line**

The third example deals with another leading vendor for whom third-party sales channels have been an integral part of company strategy over many years. For this reason, many of its largest customers are OEMs or distributors who have been responsible for much of the customer interest at system development time.

Exhibit V-4 shows how the company is now seeking to involve its third-party sales partners in the overall life cycle care approach:

- Equipment and system software products are sold via direct sales forces and through major distributors and OEMs. There is also a second level of distribution for dealers and VARs who are supplied through distributors.
- Ongoing hardware and software support is provided through national support centres manned around the clock.
- Involvement with the customer on the occasion of new sales or of a new installation has traditionally been through the sales teams and training establishments. Additionally, services for consultancy and special systems development have always been provided, but used only in a minority of cases.

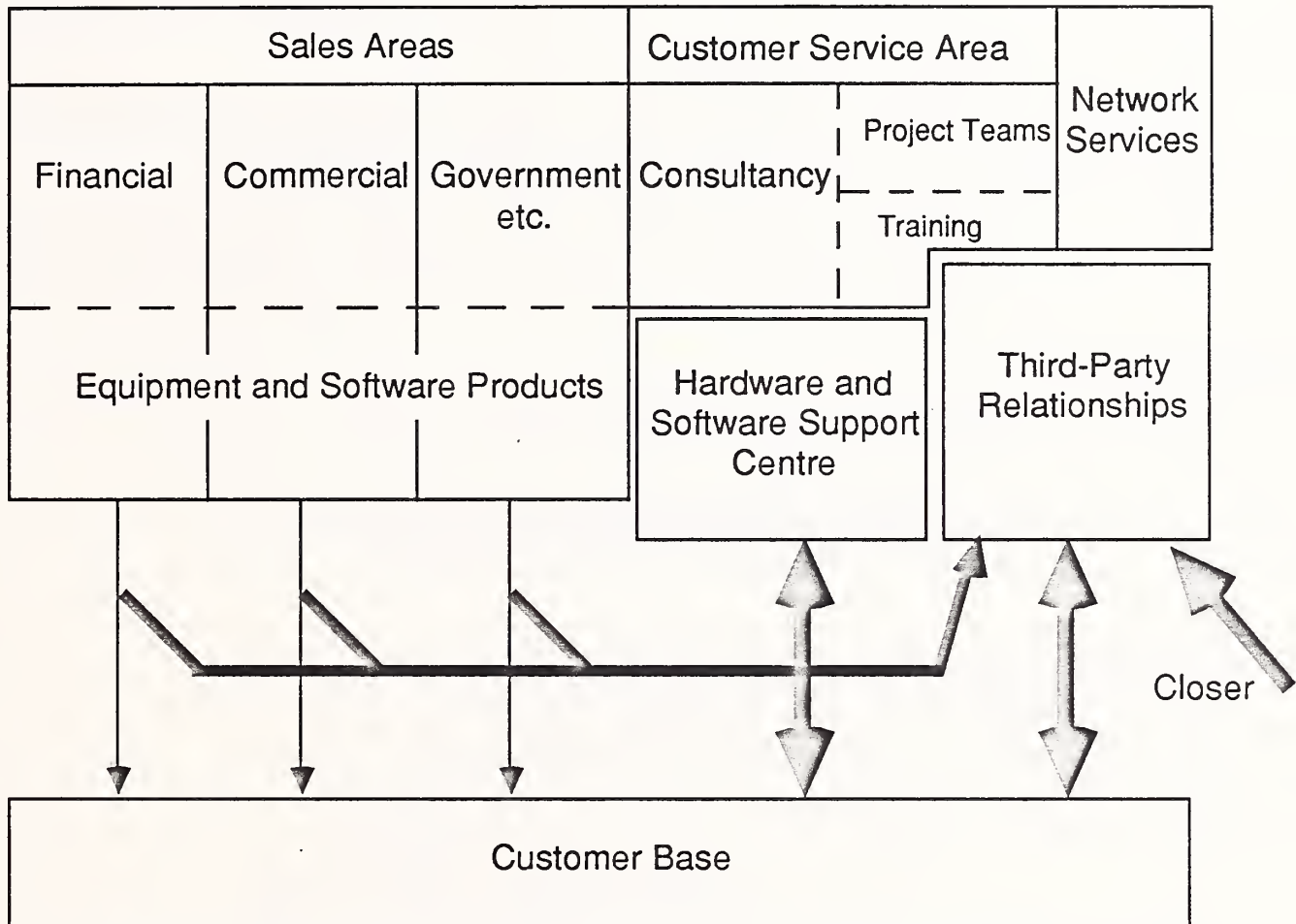
The challenge which this company appears to be facing head-on is to involve itself in a standard way in advising its customers on systems development at the applications level and, even more importantly, at the total enterprise level.

INPUT assesses this current thrust as a very proactive move to seize the initiative and to position the customer service division on the high ground in order to direct the organisation's future as a services company.

## EXHIBIT V-4

**The Customer Interface—Example 3**

(A Large Manufacturer with an Integrated Product Line—  
Closer Links with VARs)

**4. A Fast-Growing Equipment Supplier Offering Open Systems**

This vendor is one of a new breed of expanding equipment companies specialising in UNIX-based systems and servers. Systems are differentiated from servers in being more general-purpose. Servers will typically be dedicated to a single application under the control of a single console terminal available to a system manager. Systems are typically multi-application and any of the applications can be accessed from any workstation, subject to the authorisation statuses laid down through the system manager's console.

Because of the speed of its growth, this company is devoting all its management resources to equipment sales and their delivery, with the minimum of optional software layers being offered. The software catalogue supported includes:

- The company's own version of UNIX
- A range of data communications utilities
- A selection of third-party RDBMSs, i.e., Oracle, Ingres, Sybase, Informix

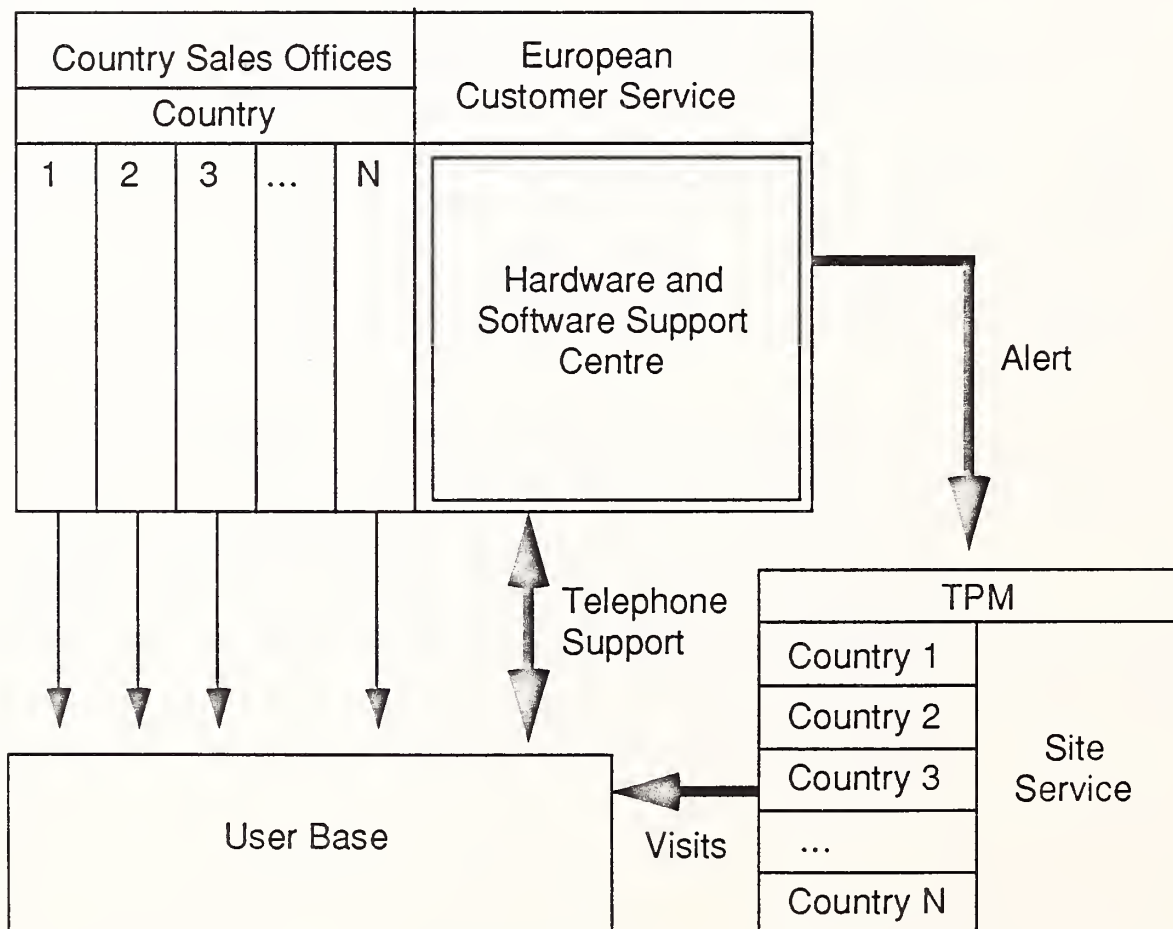
Since it is within the UNIX platform family, the kit can support any standard application written for a UNIX environment.

Exhibit V-5 shows how the company has structured its customer service operation to cover the whole of Europe with a minimum staff (under 50 in mid-1989) from a central base in one country:

EXHIBIT V-5

### The Customer Interface—Example 4

(A Fast-Growing Equipment Supplier Offering Open Systems—European Service Coverage)





- Each country or group of countries makes its own sales.
- The European support centre is accessed for fault-reporting and diagnosis from all over Europe. The support centre determines whether the fault is due to hardware or software failure, and whether the problem can be resolved by telephone, by remote support, or needs an on-site visit.
- Telephone and remote support are undertaken by the company itself, using the specialist staff at its European centre.
- On-site fixes are handled by a third-party maintenance organisation with Europe-wide coverage. Response is normally contracted at four hours or less.

INPUT's assessment of this company strategy is positive:

- The company has not been averse to outsourcing in an area where it could not hope to have the infrastructure in place soon enough.
- Integrating hardware and software support in one centre avoids dilution of effort and insures that proprietary diagnostic techniques and expertise are not lost to outside parties, and thence perhaps to competitors.

It will be interesting to watch how the company tackles the problems of delivering the other services which will undoubtedly be required if its present sales success continues. The temptation to pull field service in-house will present itself. As a late comer to the industry, however, this firm has a good chance to build a totally services-oriented operation without having the distortion of an organisation structure inherited from a time when a different set of priorities applied.

## C

### Conclusions and Recommendations

Our research has highlighted ways in which four equipment suppliers, three of whom have long histories in the industry, are emerging into the 1990s with a spectrum of approaches to the challenges presented by the sophisticated customer and his changing requirements.

Responding to change can be achieved in two ways:

- Organisational change
- Company culture change

Our examples have dealt more with change at the organisational level, which is the most visible aspect of change to the outsider looking in. Cultural change is, however, the more important:



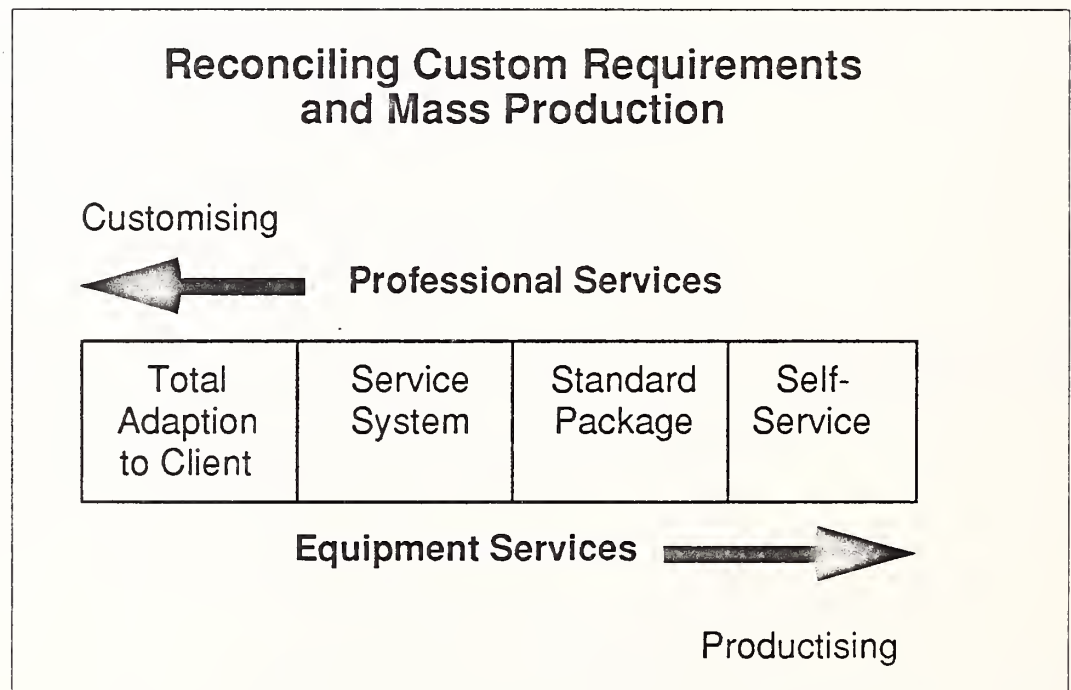
- Without a change of outlook (mindset change) organisational changes can be just tampering with the works without achieving staff commitment to reorientation towards a services mentality.
- Intra- and intercompany networking now provides opportunities to lower hierarchical barriers and create a culture in which the individual's knowledge can be brought to bear to make the whole organisation more responsive to changing user needs.

One example of this is to use the resource centre concept to maximise productivity and use of scarce staff. In the resource centre, people can work on background projects related to product development, and then become available for scheduling into custom projects as demands are encountered. The resource centre is the buffer between the planned and the random resource requirements.

Exhibit V-6 illustrates the conflict affecting management creativity in the new service-oriented market climate:

- Professional services tend towards production of a specific solution for each customer.
- Customer service has traditionally used standard service methods to enable the highest level of service to be offered per unit of cost.

EXHIBIT V-7



As product lifetimes decrease from the current eighteen months to nearer twelve, the balance of effort between customising and productising swings towards the professional services approach, as the customer's system enters the perturbations of the renewal phase more frequently.

The challenge is to track changing user needs more accurately and respond to them in the most appropriate way. This has implications at two levels:

- For the whole organisation
- For the CS organisation

At the level of the whole company, growth and profitability are obviously at risk if the challenge is not met. At the level of the customer service operation, there is a choice:

- In one option, using a customer service facilitator mechanism, the vista is opened for a much richer function within the company, deploying material and intellectual resources in a balanced way, using a balancing methodology which is natural to a service operation which is accustomed to balancing service level, response times, and profitability.
- In the other option, customer service remains a specialist function, serving the productised and productisable components of the set of overall company offerings.

The key that unlocks the door to the grand vista is knowledge management—but humanised knowledge management which treats knowledge owners not as production units (who can unfortunately vote with their feet, if so treated), but as service professionals whose worth contributes to their own value as well as that of the organisation.

The mindset change required operates at two levels:

- At the organisational level, knowledge management takes over from information management.
- At the cultural level, the enskilling of professionals goes hand in hand with the deskilling of tasks.

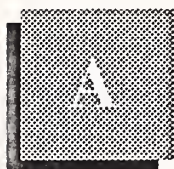




## Appendix: Definitions of Terms







## Appendix: Definitions of Terms

### A

#### Revenue

- *Captive Computer Services Revenue* - Revenue received from users who are part of the same parent corporation as the vendors.
- *Noncaptive Computer Services Revenue* - Revenue received for computer services provided from users who are not part of the same parent corporation as the vendor.
- *Other Revenue* - Revenue derived from lines of business other than those defined above.
- *Total Company Revenue* - Revenue received from total computer services and other sources of revenue.
- *Total Computer Software and Services Revenue* - Revenue received from services provided by vendors that perform data processing using the vendors' computers (processing services), assist users to perform such functions on their own computers (software products and/or professional services), provide a combination of hardware and software integrated into a total system (turnkey systems), include consulting, education and training, programming analysis, and facilities management (professional services), provide for systems design, integration and installation (systems integration), or offer enhanced network services, electronic mail, electronic data interchange, or electronic information services (network services).

### B

#### Service Modes

- *Customer Services*
  - **Hardware Maintenance:** refers to the repair or routine preventive maintenance of computer systems hardware or hardware components, including associated supporting activities such as telephone support, problem analysis, hardware diagnostics, etc.

- Software Service/Support: embraces software maintenance activities that relate to operating systems software (not applications software), including associated supporting activities such as telephone support, problem analysis, software diagnostics, etc.
- Professional Services: within the definition of customer services, this segment of the market refers to those elements of professional services that are delivered and revenueed exclusively as a customer service activity.

Examples of customer service professional services are as follows:

- Cabling
- Consultancy
- Network Planning
- Network Management
- Systems Software Evaluation
- Problem Management
- Configuration Planning
- Environmental Planning
- Installation
- Education and Training: within the definition of customer services, this segment of the market refers to those elements of education and training that are delivered and revenueed exclusively as a customer services activity. Education and training activities are defined as those relating to computer hardware or operating systems software (not applications software). This aspect of customer services would normally comprise:
  - User hardware maintenance, “housekeeping,” support training, and operator training
  - User operating systems software maintenance, “housekeeping,” support training, and operator training
- *Processing Services*
  - Transaction Services: uses vendor equipment and software at vendor site or customer site, may be interactive or remote batch-oriented.
  - Utility Services: access to basic software tools enabling the users to develop their own problem solutions (language compilers, assemblers, DBMSs, sorts, scientific library routines, etc.).
  - Other Services: carry-in batch processing, computer output microfilm services (COM), data entry services, disaster recovery/backup services.

- Systems Operations (Facilities Management): the management of all or part of the user's information processing functions under a long-term contract of not less than one year. To qualify, the contractor must directly plan, control, operate, and manage the equipment providing service to the user—either at the client's site or at the vendor's site on equipment owned by the vendor.
- *Professional Services* - Management consulting activity related to EDP systems consulting, production of custom software, education and training, and systems operations of client-owned computers (formerly identified as facilities management), where the vendor provides human resources to operate and manage the client facility.
- *Systems Integration* - Delivery of large, multidisciplinary, multivendor systems, incorporating some or all of these functions: systems design, programming, integration, equipment, networks, installation and acceptance. Systems can encompass multiple product delivery modes.
- *Software Products*
  - Systems software and/or applications software packages purchased by users
    - Systems Software Products
 

Systems Control Software: operating systems, communications monitors, network control, library control, windowing, access control, security, etc.

Data Centre Management Software: capacity management, scheduling, job accounting, performance monitors, tape management, utilities, downtime repair monitoring management, etc.

Application Development Tools Software: application generators, assemblers, compilers, 4GLs, automated documentation, languages, translators, database management systems, data dictionaries.
    - Applications Software Products
 

Cross-Industry Applications Software: used by clients in many or all vertical markets (i.e., payroll, word processing, spreadsheets, accounts receivable).

Industry-Specific Applications Software: unique to a specific vertical market and sold into that market only (i.e., demand deposit accounting, MRP II, hospital patient tracking).

- *Network Services*

- Network Management and Enhanced Services: network management functions, network transmission facilities, augmented with computerized switching and features such as packet-switching, electronic mail, store-and-forward message switching, terminal interface and error detection and correction.
- Network Applications
  - Electronic Data Interchange (EDI): application-to-application electronic communication, based on established business document standards.
  - E-Mail: a range of services that transmits documents consisting of text and graphic material to be read by a person, with the quality of document being high.
  - All other application services in which the network is the principal part of the service, e.g., electronic funds transfer and some videotex services.

- *Electronic Information Services*

- Databases that provide specific information via terminal-based inquiry such as stock prices, legal precedents, economic indicators, airline schedules, etc.
- News services that offer current information, either general or for a specific category, i.e., financial or political
- Other services that provide interactive access to databases and offer the inquirer the capability to send as well as receive information for such purposes as home shopping, home banking, travel reservations, etc.
- *Turnkey Systems* - an integration of systems software, packaged or customized applications software, CPU, equipment, and peripherals. These systems are developed to meet a specific set of user requirements. The value added by the vendor is primarily in the software, either packaged or custom-developed. Most CAD/CAM systems and many small business systems are turnkey systems. This does not include specialized hardware systems such as word processors, cash registers, and process control systems.



**C****Other Considerations**

When questions arise about the proper place to count certain user expenditures, INPUT addresses them from the user viewpoint. Expenditures are then categorised according to what users perceive they are buying.





# Report Quality Evaluation

To our clients:

To ensure that the highest standards of report quality are maintained, INPUT would appreciate your assessment of this report. Please take a moment to provide your evaluation of the usefulness and quality of this study. When complete, simply fold, staple, and drop in the post.

*Thank You.*

1. Report title: ***The Professional Services Challenge—Western Europe, 1989***  
(CTNE)
2. Please indicate your reason for reading this report:  

<input type="checkbox"/> Required reading	<input type="checkbox"/> New product development	<input type="checkbox"/> Future purchase decision
<input type="checkbox"/> Area of high interest	<input type="checkbox"/> Business/market planning	<input type="checkbox"/> Systems planning
<input type="checkbox"/> Area of general interest	<input type="checkbox"/> Product planning	<input type="checkbox"/> Other _____
3. Please indicate extent report used and overall usefulness:  

	Extent		Usefulness (1=Low, 5=High)				
	Read	Skimmed	1	2	3	4	5
Executive Overview .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Complete report .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Part of report (____ %) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. How useful were:  

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Recommendations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. How useful was the report in these areas:  

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Cover new areas not covered elsewhere .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confirm existing ideas .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meet expectations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Which topics in the report were the most useful? Why? \_\_\_\_\_  
\_\_\_\_\_
7. In what ways could the report have been improved? \_\_\_\_\_  
\_\_\_\_\_
8. Other comments or suggestions: \_\_\_\_\_  
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*Thank you for your time and cooperation.*

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